

COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

AUGUST 1943

ONE THING THE WAR WON'T CHANGE

When America's new truck lines are introduced after the war, there will obviously be new designs, new models, new mechanical improvements, new eye appeal . . .

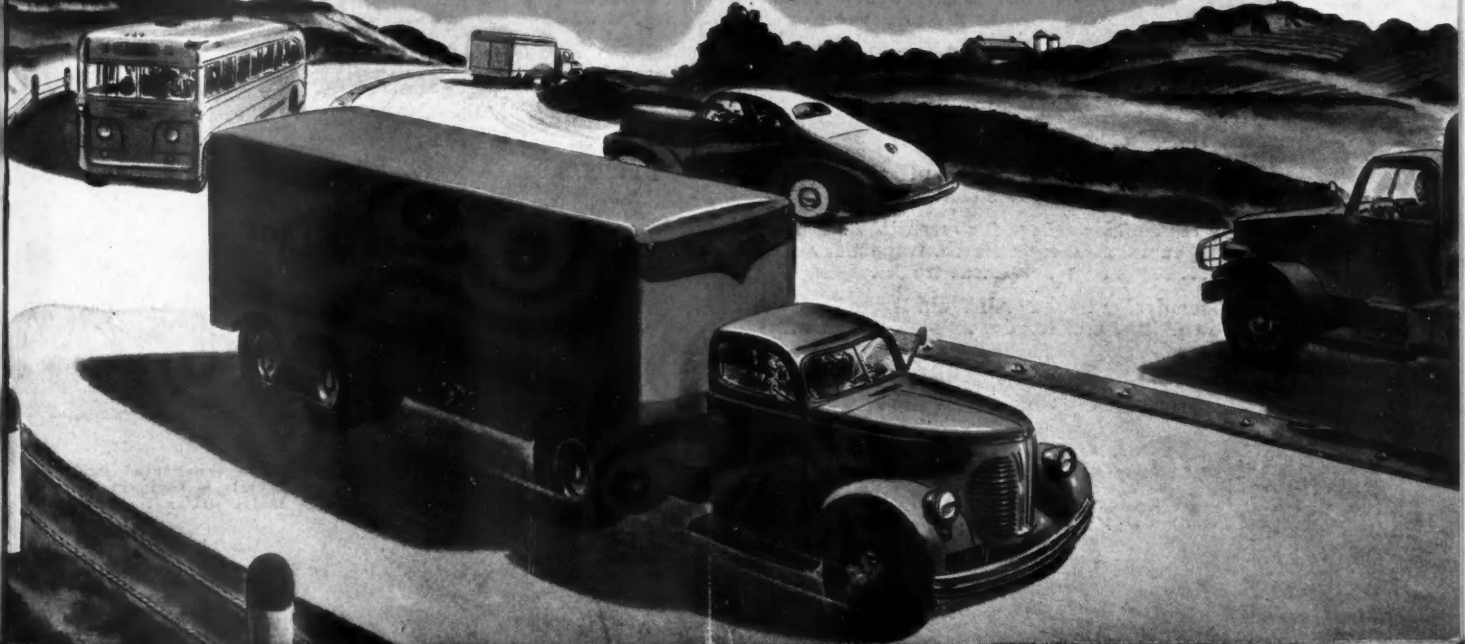
But, underneath it all, truck buyers will still be chiefly interested in **TRANSPORTATION COST**. Ton-mile cost will still be the basic measuring stick of motor truck value.

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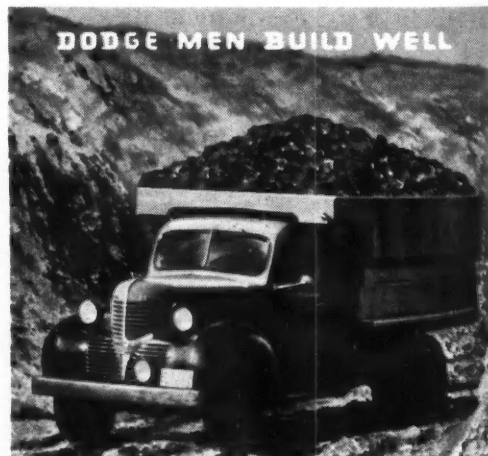
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Acceptance under the Act of June 5, 1934, authorized December 18, 1934.

Published monthly

Member C.C.A.

Vol. LXV

Philadelphia, August, 1943

No. 6

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SUBSCRIPTION RATES: United States and United States Possessions and all Latin-American countries—\$2.00 per year. Canada and Foreign—\$4.00 per year. Single copies—25 cents. April issue, \$1.00.

Owned and Published by
CHILTON COMPANY
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Executive Offices

Chestnut and 56th Streets, Philadelphia 39, Pa., U. S. A.

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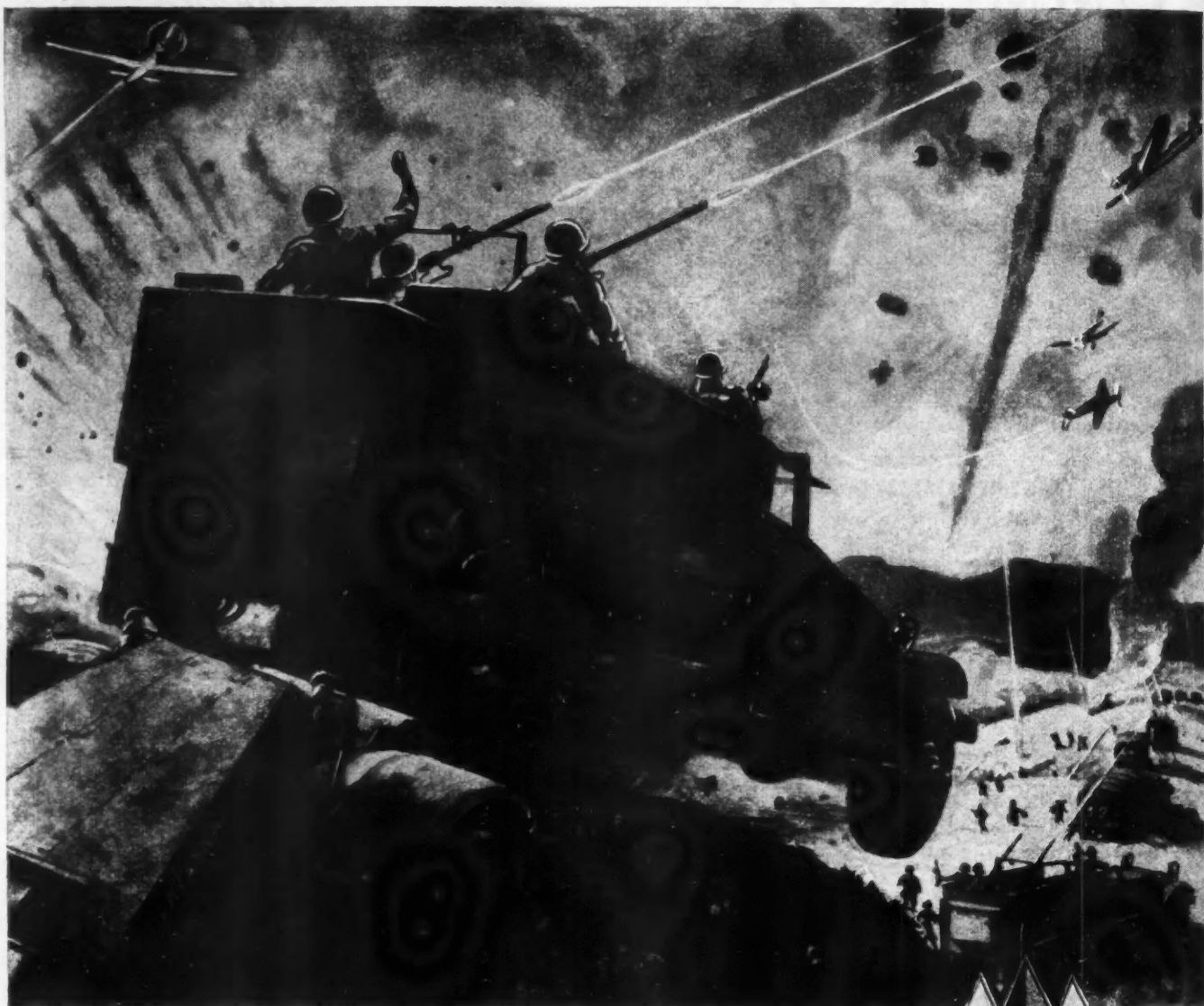
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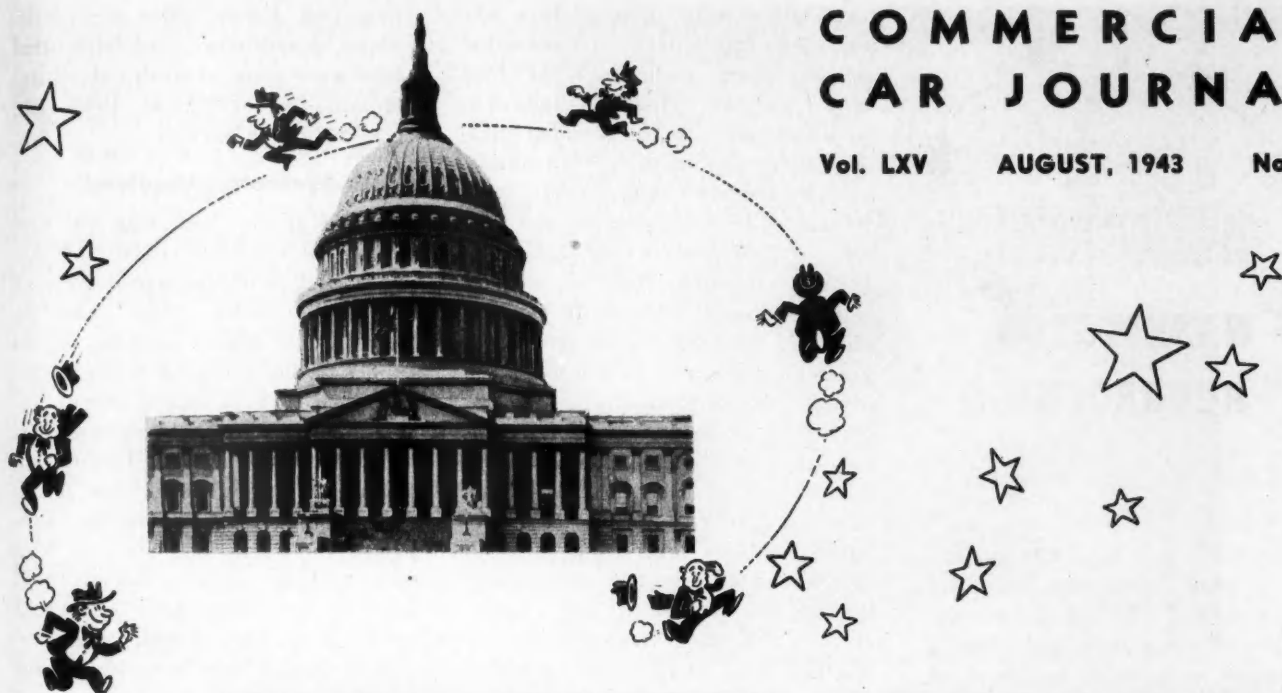
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WASHINGTON RUNAROUND

Eastman Pitching

Joe Eastman, on the mound for ODT, served up an assortment of pitches during the month of July. He displayed a fast ball that was a lulu and a curve, inside and throat high, that was a puzzler.

He threw the fast ball at other government agencies. It was a warning, reported elsewhere in this issue, that an efficient highway transportation system required solution of the problems that confront the industry, and that its preservation required more than the sacrifices which operators have been making under ODT restrictions. The pitch was a peach and was generally regarded as a concession to the demands of operators that ODT stand up for the industry against other government agencies.

The curve was thrown in the direction of WPB's Donald Nelson and, for some types of truck operators, it was a bean-ball. This pitch was a letter in which, according to a Washington newspaper, Director Eastman asked Mr. Nelson to narrow the list of "preferred commercial users of gasoline in the Northeastern shortage area." Said the newspaper account:

Eastman Pitching . . . Fast Ball and Bean Ball . . .
Confusion Wins . . . No Sense in Gasoline Situation . . . Rubber Back as Problem . . . Truck Synthetics Unsolved . . . Speed Test Shows Up Tires . . .
Heavy-Duty vs. Medium Trucks . . . ODT Wants to Handle TT Coupons . . . ODT's New Director, Etc.

by GEORGE T. HOOK, Editor

"The requested cut in the list of 'preferred' industrial users of gasoline—those eligible to obtain additional supplies by appealing from the 40 per cent 'stretchout' in commercial rations—should be drastic enough to get it down to the 'absolute bedrock' of essential users, ODT officials maintain."

A few days later Mr. Eastman spoke at a conference of New England governors. There, according to another newspaper account, "Mr. Eastman disclosed that he had ap-

pealed from a PAW-WPB cut in the allotment of gasoline for passenger cars and commercial trucks in the East for this quarter and that if the WPB restores the cut it would mean upwards of 3 gallons per coupon would be available for 'A' card holders."

Confusion Wins

Thus in the space of a few days Director Eastman (1) asked other government agencies to give truck operators some much-needed help;



(CONTINUED FROM PAGE 35)

(2) used his own agency to ask further gasoline restrictions on truck operators, and (3) asked for more gasoline so that even non-essential passengers cars would be benefited. It was an amazing example of bureaucratic breeding of confusion. It even looked as if the industry might be getting the well-known "run-around." But that was not in keeping with Mr. Eastman's character. It might be that underlying factors changed in the space of those few days and prompted a change in tactics. But whatever the cause, the incidents proved again that the industry did not have in ODT the defender, the protector, the well-wisher that it pretended to be. It was still quick on the restriction trigger.

No Sense in Gas Situation

The gasoline situation was still muddled in July. Most truck operators seemed to be getting along with only minor discomfort. Preferred users were getting all the gas they needed to operate under ODT conservation orders. In the eastern shortage area appeals were said to total about half the amount anticipated by ODT and were being handled expeditiously. The industry was not in pain and there was no squawking. But the politicians were at work with their eyes on votes. Despite the shortage and the restrictions imposed on more essential commercial users, passenger car owners were allowed to use their rations for vacation travel, a concession that made most local OPA ration boards hold their noses. Petroleum Administrator Ickes was receding from a previous stand and talking about equalizing the gasoline shortage among eastern

and mid-western areas. This was expected to provide non-essential passenger car owners in the East with more gas. There was talk even of lifting the ban on so-called pleasure driving. There was an admission by the petroleum industry that because of censorship it did not know the demand of military forces. It was warning that a product shortage would occur if the government did not take steps to encourage greater oil production. The Big Inch pipe line began pouring over 300,000 barrels of crude daily into the Eastern area but Ickes said this was earmarked for military needs. Steps were being taken to juggle transportation facilities that would provide the "have-not" area with more gasoline at the expense of the "have" areas. There was as yet no indication whether mid-eastern truck operators would, in the course of a share-the-burden program, incur more restrictions and eastern operators get some relief. In short, the situation was in such a mess that a thorough investigation was called for and was, in fact, under way.

Rubber Back as Problem

Rubber snapped back into the limelight with a snap that echoed and re-echoed in the air-conditioned corridors of official Washington. If, after his reassuring statements, Rubber Czar Jeffers' face was ruddier than usual he gave no sign of it by word of mouth. He was curiously silent while word spread that a shortage of truck-size tires had developed. In bureaucratic circles it was said there was plenty of rubber but that the military had made such demands that manufacturing facilities were inadequate to supply both military and civilian needs. It was reported that truck operators were being denied the 10 per cent emergency supply previously accorded them. No one seemed to know how serious the situation was, and everyone seemed to consider it as temporary. But whatever it was, it provided officialdom with a ghost that was duly trotted out to scare operators back into the insecurity from which they had ventured on the strength of Mr. Jeffers' assurances that all was well with rubber and tires for essential uses would be available. The sudden development was the more puzzling because for weeks rumors had been

afloat that Jeffers' office viewed the rubber situation so confidently that plans were afoot to wash out all tire rationing as of March, 1944, and recap rationing earlier.

Truck Synthetics Unsolved

But if all was well with the production of synthetic rubber, all was not so well with the manufacture of all-synthetic truck tires. And, as matters now stand, solution of the rubber problem depends upon the development of a satisfactory all-synthetic tire in the truck sizes. It is admitted that a satisfactory all-synthetic passenger car tire is already in production. But the loads placed on truck tires and the heat they generate present special problems to the all-synthetic shoe that have not yet been licked. Fleet operators should bear in mind that the so-called synthetic tires with which favorable experiments have been made on trucks previous to and since Pearl Harbor were not made entirely of synthetic rubber. The rubber in them was a compound of synthetic and natural rubber. The Truman Investigating Committee edged into the tire problem with a report that called into question the relative value of rayon cord over cotton cord in heavy-duty synthetic rubber tires. Answering the charges Undersecretary Patterson, speaking for the Army, and Jeffers declared they would string along with the recommendations of tire development engineers, and that Army tires would continue to be made with rayon cord. The Truman Committee criticized the tests that had preceded the Army's choice of rayon cord, and called for something more scientific. It was not likely that this demand would be ignored; the economy of Cotton States was too greatly involved.

Speed Test Shows Up Tires

The tire studies, made in connection with ODT's 35-mile speed limit test, were not such as to bring joy to the hearts of operators, according to inside information. The results of the test have not been compiled but it is said that the tire studies uncovered results which indicated that tire manufacturers would favor retention of the 35-mile per hour speed limit and abolition of the 120 per cent load factor authorized in (TURN TO PAGE 172, PLEASE)

NOBODY needs to be told now that war production and the whole war effort are absolutely dependent on transportation—of both property and persons, and that domestic transportation is quite as important as overseas transportation. The fact is generally recognized. Everybody recognizes, also, the importance of the railroads in domestic transportation, and how remarkably well they have performed. The like importance of motor truck and bus transportation is, perhaps, not so widely understood.

Motor transportation rendered much good service in the last World War, but in the intervening period, prior to this World War, it grew from an infant to a giant. We are now dependent on these highway automotive vehicles as no other country on earth is, and in many different ways. In our military forces, motor trucks and jeeps are numbered by the hundreds of thousands, and both the Army and the Navy have big quotas of buses. In what is called civilian transportation—the fact is that practically all of it is vital in one way or another to the war effort, we now have about 4,600,000 motor trucks. The greater number do the same general kind of hauling that the horse and wagon used to do, but they have tremendously magnified its capacity for work. About a million are owned by farmers, and the farms could not possibly now get along without them. Nearly three million are in other private use or, to state it more accurately, in other service which is not for-hire service. Our local community life and man businesses are vitally dependent on these trucks.

About 600,000 are in for-hire service, some of it local, but much of it over-the-road, intercity service. This is where the larger trucks are to be found, and those most intensively used. The relative numbers do not indicate the present importance of this form of trucking to the Nation; but every industry knows it, our military forces know it well, and even the railroads know and frankly recognize it. These trucks have taken away from the railroads a great amount of short-haul package and other high-grade freight. With the load they are carrying, the railroads



EASTMAN ISSUES WARNING ON TRUCKS

Statement, seen as response to demand of operators for more vigorous action, points out to other agencies that carriers cannot solve problems alone by conservation, and that manpower, new equipment and parts must be provided and financial condition protected to bar breakdown

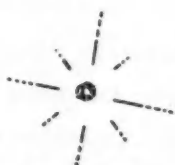
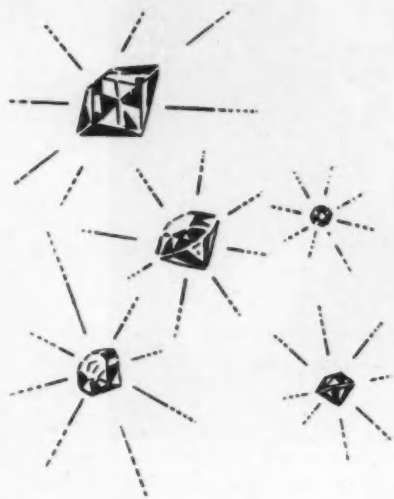
by JOSEPH B. EASTMAN

Director of the Office of Defense Transportation

could not now take this freight back without disaster. The fact is, also, that it is the kind of freight to which railroad service is least well adapted. The trucks can handle it more efficiently. The loss of much such freight to the trucks is one of the important factors that has enabled the railroads to increase the average speed of their freight operations very

materially in recent years, and hence to get more service out of their equipment. This has contributed to their present fine showing. The trucks also move considerable long-haul freight, often because of flexibility and speed of over-all performance. Shippers can depend upon the trucks for the necessary service, when

(TURN TO PAGE 122, PLEASE)



WOMEN ARE GEMS IN JEWEL FLEET

They do not sparkle in all particulars, but national organization with over 700 women sales drivers is pleased with progress and reveals a few of the problems

by G. H. SIBLEY

Chief, Sales Operating Division, Jewel Tea Company, Inc., Barrington, Ill.



G. H. Sibley

ABOUT a year and a half ago the Jewel Tea Co., Inc., began for the first time to hire women sales drivers, to replace our in-

creasing war-emergency shortage in men drivers. During the intervening 18 months, the percentage of women, among our drivers who are operating route cars in the distribution of food products in 43 different states, has been steadily increasing, and of about 1590 drivers over 700 are women.

We can state in general that our new women drivers have been doing a satisfactory job. Hundreds of women—many of them inspired in part by patriotic motives to do what they can to help replace men going into war service—have come forward to enable use to meet the most critical personnel emergency that has come to our company during the 44 years that we have been operating outside sales routes.

Needless to say, our employment



Pictured here are a few of the hundreds of women sales drivers employed in 43 states by the Jewel Tea Co., Inc. Shown receiving instructions in proper tire inflation is Mrs. Gladys Deskin, of West Des Moines, Iowa. Branch Manager A. E. Hohnson is the instructor. At the wheel of her sedan delivery is Miss Helen Bernard, Omaha route saleswoman. About to enter her truck is Angelin Barlow who covers a route in Los Angeles

of women for this work has brought a number of puzzling new management problems, and we are still in the "experimental stage" in working out some of them. These problems include the development of more definite standards to guide us in the preliminary selection of women applicants; and the development of more intensive procedures for the initial training of the women selected for employment. Also, we are experimenting to improve our supervision methods for all women, to aid them in the safer and more efficient handling of the light, panel-body, company-owned delivery trucks which they operate. One of these latter management developments has been the promotion of 35 of our women drivers to become "route supervisors."

In general, our women drivers have been having a few more accidents proportionately than our men; but this may be due in large part, or wholly, to their much shorter average driving experience with the delivery type of car, as contrasted with their usual previous experience only

with the incidental driving of a family passenger car. A large percentage of these accidents has been of the less severe type, most frequently from backing and entering or leaving a garage. Many of our women drivers are more careful than some men drivers in giving attention to the proper maintenance and care of their cars—watching tire inflation, promptly reporting needed shop adjustments or repairs, and keeping the interiors of their cars neater and the exteriors dusted and polished. All women drivers are expected, in an emergency, to be able to change a tire. They do not expect or receive favors in loading and servicing their cars and handling them in the garage.

As to sales results, many of our women are averaging as well or better than men drivers of comparative training and experience.

A management problem with many women drivers is to develop habits of regularity in early morning starting. Also, many women seem to lack the physical vitality to keep at their jobs with the same day after day regularity and completion under all

conditions of weather and discouragements that we expect generally from men.

Thus, when a branch manager or his assistant is interviewing a woman driver applicant, he must give primary consideration to the promise of sales ability and physical fitness for the job. The applicant also must show promise of becoming a safe and efficient driver of a company-owned car. The company especially stresses safe driving and Jewel fleet has always maintained an outstanding record for safe driving. We keep constantly before our drivers the slogan "Jewel salespeople are considerate drivers and they never take chances."

About nine months ago we initiated the policy of promoting some of our qualified women drivers to positions as "supervisors," to aid in our program of hiring and training women drivers. We have now 35 such supervisors, and a summary analysis of the background of 30 of them suggests something about the type of woman drivers who are proving most successful. As to age, 15 of them were then under 30; four were over 40, and their average age was 32 years. In education, four had eighth grade schooling or less; nine had some high school; 10 were high school graduates, and seven had some college. In marital status, six were single; 13 were divorced, widowed or separated, and eleven were married. Twelve had dependents and 18 were without dependents. Twenty of the 30 had had previous management or sales experience, and their previous average weekly earning was \$21.47.

Through a long period of years the company has been able to develop some rather definite guiding standards as to the most promising qualifications for a successful man
(TURN TO PAGE 78, PLEASE)

TRUMAN REPORT SUPPORTS INDUSTRY



Members of the Senate Truman Investigating Committee are here shown with the late Edsel Ford. At left is Senator Truman, committee chairman. The other senators are Ferguson and Wallgren

Senate Investigating Committee sees truck transportation subjected to a "complicated control" by a variety of agencies, suggests the possibility of "one strong Director of Truck and Bus Operation" and urges manufacture of more vehicles and parts in order to "prevent recurrence of emergency"

BASED on conditions found by its investigations the Senate Investigating Committee chaired by Senator Truman, of Missouri, reached the following conclusions in its preliminary report which are to become the basis of any constructive administrative or legislative action:

1. Bus and truck operators throughout the country have diligently endeavored to carry on their oper-

ations with due regard to both the civilian economy and military necessity and have done so under great hardships with great difficulty because of the conditions stated.

2. The operations, of both buses and trucks, since the war emergency was created, have definitely become a National Defense Industry, and the continuance of both is necessary along normal lines to maintain the operations of many war industries, army

encampments, and food production, which are absolutely necessary for our troops at home and abroad.

3. There has been an intelligent consolidation of bus and truck traffic under supervision of the Office of Defense Transportation whereby many non-essential activities have been reduced and the necessities of National Defense enlarged so as to make the operations of both buses and trucks more essential and valuable to the National Defense Program.

4. With respect to trucks particularly there has been since the creation of the war emergency great handicaps in the purchase of essential parts to maintain in active and continuous operation many thousands of vehicles in all parts of the U. S. To a lesser degree the activities of the truck operators have also been limited by a shortage of tires, repair shops and mechanics. Truck operators have also suffered from inability to obtain new trucks, particularly of the heavy type trucks, as well as other types. The chief reason for this condition has been either a lack of supply of carbon and alloy steel, or a failure properly to allocate such materials. To a less exaggerated degree the same condition has prevailed as to buses.

5. The Committee believes that the difficulty with respect to the obtaining of essential parts has been made more acute since the war emergency by reason of the failure of governmental agencies, and particularly the War Production Board, to foresee the largely increased traffic demands which would occur in the operation of both buses and trucks in all parts of the country, and particularly to foresee accurately that such need was met by an adequate supply of steel for such purpose.

The Committee also finds that when the War Production Board assumed control of the allocation of all steel for essential civilian and war purposes that it failed to foresee to the full extent the necessity of continuous normal, and even increased operation of trucks and buses because of the increased demands of both the civilian needs and those of National Defense.

The construction of many Army, Navy, Coast Guard and other National Defense encampments throughout the country, the movement of military equipment, transportation of millions of women and men daily to their work in the National Defense

Program were not appreciated or clearly foreseen for a long time subsequent to Pearl Harbor.

Hence there was no provision for maintenance of the regular flow of necessary parts for the maintenance and upkeep of buses and trucks *or for the replacement of new vehicles*. It is the consensus of opinion of many persons and corporations in the bus and truck business that the chief reason for the failure to provide an adequate supply of necessary parts to keep the fleets of trucks and buses throughout the country in full operation was the requirement of the War Production Board, by its order L-158 (spare parts order) restricting the use of materials for such purpose and limiting the inventories of manufacturers.

The Committee finds an almost universal agreement among those it has heard from on the subject that if manufacturers were authorized and provided with materials to restore their pre-Pearl Harbor inventories and to maintain them on that basis, the critical essential parts problem would be substantially solved.

6. Solution of parts problem, which the Committee believes could be brought about by restoring to manufacturers their normal, pre-Pearl Harbor inventories would likewise solve many problems:

(a) Would permit the gradual expansion of both bus and passenger traffic by permitting repairs of many trucks, which have been discarded as useless, because of lack of necessary parts which have worn out; would make repairs much more efficient and speedy, and would allow many older trucks to be rehabilitated.

(b) Access to an adequate supply of essential parts would make it possible to put many buses and trucks back into operation in all centers where there are adequate supplies of repair stations and where distribution stations are conveniently located.

7. The Committee finds that the Selective Service draft has made heavy inroads into the bus and truck operating personnel. This has been due to the fact that bus and truck operators have trained their men mechanically and that their mechanical efficiency has made them highly desirable from the military standpoint.

8. The control of materials necessary for the manufacture of essential
(TURN TO PAGE 84, PLEASE)



A STATEMENT

By SENATOR PAT McCARRAN, of NEVADA

With regard to the preliminary report of the Truman Committee on the matter of freight and passenger traffic by trucks and buses and its relation to and effect on the war program.



THE Truman committee is to be greatly commended for the thoroughness with which it has gone into this problem of highway transportation.

The committee's report shows clearly how the vital truck and trailer transportation industry has been handicapped throughout the emergency period by alleged shortages of one kind or another. For a time the big bugaboo was rubber, but that is now happily behind us. It is to be hoped that the present gasoline situation will not be used as an additional excuse to further hamper and impede highway transport, maintenance and improvement of which is absolutely essential to the war effort.

In view of the official expectation that trucks and trailers will be called upon next year to transport 15 per cent more traffic than this year's load, preparations should be made by the War Production Board and all other governmental agencies concerned, to provide necessary additional and replacement vehicles, spare parts, and gasoline to keep the vehicles running on the necessarily expanded scale.

If any phase of the problem has been slighted by the Truman Committee's report, it is the need that manufacturers be left free to build the normal, efficient models they have developed through the years, instead of the vastly inferior models programmed by WPB. The prototype models WPB specified in the case of

trailers, for instance, bare chassis with wooden bodies to be mounted later, are far more inefficient as to carrying capacities than normal trailers and are, I am informed by representatives of the industry, more expensive of labor and materials, including steel, than the normal models. Operators of highway transportation have advised the WPB they will not purchase these inferior substitutes. The WPB order, therefore, obviously is contributing nothing but delay and confusion to a situation already too long delayed and too much confused.

The report now released by the Truman Committee is not yet in final form, and is characterized by the committee as incomplete. The final report quite probably will touch more fully on this phase of the problem.

Adoption of the recommendations made in the Truman Committee's report, both directly and by implication, will go a long way to alleviate a highly critical situation. I am hopeful that in view of the great care and thoroughness with which the committee has considered the whole matter, its conclusions and findings will be given immediate and most serious attention by the War Production Board, the Office of Defense Transportation, and other Federal agencies concerned. I shall of course expend my efforts, in every way possible to see that such attention is accorded, and that necessary remedial action is taken.

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L116. Brake Lining Catalog

Fleet operators are offered a new 44-page catalog of pressure-moulded brake linings. The catalog contains recent and complete size and number data on roll and heavy-duty block linings as well as multiple coverage segments for both internal and external applications. It also contains complete dimensional data, including drum diameter, width, thickness and length of lining, and number of pieces required for each application.

Listings are conveniently arranged by make and model of vehicle and include sizes for every truck, trailer, tractor and passenger car as well as many types of industrial equipment. A handy reference book for every fleet operator. Write L116 on the postcard for your free copy.

L117. Fan Belt Service Manuals

Fleetmen who are interested in the basic causes of premature belt failure, how to check vehicles for the existence of these causes and how to correct them, should find helpful data in two new manuals on belt maintenance, now available to them.

One manual outlines fan belt troubles, causes and solutions. This is a handy little manual that should be in the hands of every mechanic in a fleet shop.

The second manual is a comprehensive 64-page book on belt service for truck and bus operators. In addition to all the service data contained in the smaller manual, it also contains alphabetical listings of trucks, busses and tractors, showing the proper fan belts required for each model.

Both of these manuals are a handy guide to better belt performance, and every fleet operator should benefit by having copies of them in his reference file. Write L117 on the postcard for your free copies.

L118. Socket Wrench Care

New light is placed on the importance of socket wrenches by a 12-page booklet now

available to fleet operators and their mechanics. The booklet presents helpful suggestions for buyers and users of socket wrenches. While using humorous illustrations to convey its recommendations, the booklet may be called "know how" literature, since its suggestions are aimed to give information on the extra utility, speed and safety which modern socket wrenches can bring to essential war work.

"Mechlins" (introduced as second cousins of the well known "Gremlins") are trouble makers for men who handle wrenches. The booklet introduces the "Mechlins," and presents antidotes for each one. A booklet that every mechanic should have, it not only identifies these "Mechlins," and how they can be exterminated, but also gives suggestions for prolonging the life of all small hand tools. Write L118 on the postcard for your free copy.

L119. Cylinder Plating Manual

How to increase engine life by a precision process of applying hard chromium to cylinder bores is fully explained in a new manual, now offered free to fleetmen.

What the process does, how it is applied and what the results, are all explained in this manual. The manual also contains case history data, proving that this process multiplies engine life.

Every fleet operator who is interested in long engine life and better performance, should find this book worth reading. Write L119 on the postcard for your free copy.

L120. Sheet Metal Booklet

Fleet operators who are planning ahead for more efficient trucks trailers in the post-war period, by the use of lighter, higher-strength alloy steels, will be interested in a new booklet now offered.

The booklet tells all about paintable galvanized sheets and how they take and preserve paint. It also gives results of comparative tests and describes in detail

the recommended finishing practices. There are also special sections on welding. A worthwhile booklet for every fleet operator to read. Write L120 on the postcard for your free copy.

L121. Lathe Maintenance

Lathes and other modern precision tools must be kept in trim if they are to give the long, trouble-free service that is expected of them. Although the adjustments required to keep lathes in their best operating condition are comparatively simple and few, they are important and should not be neglected.

Anyone concerned with lathe operation will find much helpful information in a new 28-page booklet entitled "Keep Your Lathe In Trim." This booklet shows how to check on the motor, belt tension, back gear tension, spindle bearings, etc. Its many illustrations supplement the clearly written text matter to fully describe the best methods of keeping lathes in constantly good working order. Get a copy of this booklet for your machine shop. Write L121 on the postcard for your free copy.

L122. Air Compressor Chart

Fleet operators now may obtain a unique check chart which will help them to prolong the life of their air compressors. With air compressors practically irreplaceable in civilian use because of the war, this new chart fills a real need.

On one side of this chart is a list of nine important checks on equipment to be made daily, weekly or monthly. A feature of the chart is a record form printed alongside the list of weekly and monthly checks where the users may enter the dates on which the recommended check-ups are made. On the reverse side, each checking operation is described in detail and illustrated. Every operator should have one of these charts hung on the wall near their compressor. Write L122 on the postcard for your free chart.

L123. Accident Definitions

Fleet operators who have the responsibility of reporting motor vehicle accidents (TURN TO PAGE 128, PLEASE)

COMMERCIAL CAR JOURNAL

Chestnut & 56th Sts., Philadelphia 39, Pa.

August, 1943

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The latest in shop equipment, supplies, replacement parts and accessories developed by manufacturers for fleet operators. For more details of any product described, fill in the number on the postcard and mail. No stamp needed. Also use the postcard for additional information on any product advertised in this issue.

P130. Wartime Spray Gun

To overcome the difficulty experienced in securing aluminum and other materials, which have been holding up production of Thor Nos. 2 and 7 spray gun models, the Binks Mfg. Co., Chicago, Ill., is now producing the new Thor No. 17 gun, for quick deliveries in war time.

This new gun, while not possessing the elaborate finish of the No. 7, gives equal



performance, and is offered as a thoroughly dependable substitute for either of the other guns. Most important, it can be secured without undue delay.

Use free postcard for more details

P131. New Welding Shields

Davis Emergency Equipment Corp., Newark, N. J., announces that they have ready for immediate delivery a large quantity of new models of "Huntsman" acetylene and arc welding shields.

The new shield has a patented locking device and a comfortable, easily adjustable headgear. The locking device holds the shield in the correct position before the face to assure that the line of vision passes through the lens at right angles to the surface of the glass. It also holds the shield firmly above the head while the welder is preparing his work. When welding must be resumed, a slight nod of the head will lower the shield into the correct working position. The locking device automatically

adjusts the shield to the same position each time. Shields are light in weight, ranging from 1 lb. to 1½ lb., and are available for immediate delivery from stock in six models.

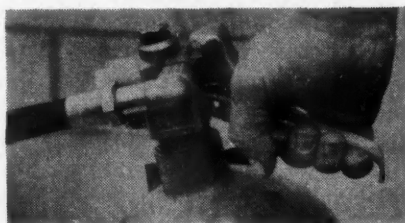
Use free postcard for more details

P132. Fire Extinguisher Valve

A new type valve for carbon-dioxide extinguishers, known as the "Squeeze-Grip," has been developed by the C-O-Two Fire Equipment Co., Newark, N. J.

The valve operates by a lever directly over the carrying handle of the extinguisher. By merely applying pressure, or squeezing, with one hand, the valve is opened and the gas discharged. On releasing the pressure, the valve closes and the gas discharge is cut off. The valve can be opened and closed without setting down the extinguisher, which must be done when a handwheel type of valve is used.

On closing, the valve is forced tightly against its seat by the tremendous gas pressure in its own cylinder. There are no replacement parts, such as sealing discs,

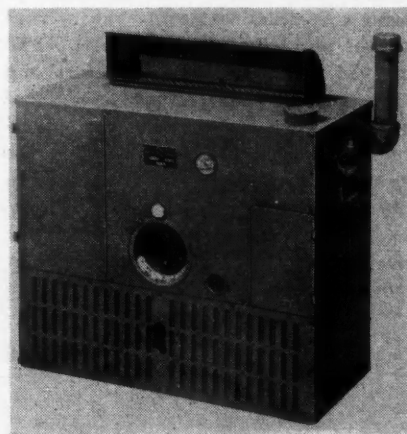


etc., and the valve does not have to be taken apart for recharging and reassembling after filling. The Squeeze-Grip valve is applicable to any size carbon dioxide extinguisher of the hand type.

Use free postcard for more details

P133. Unit Heaters

Hunter and Co., Cleveland, Ohio, announces a new portable gasoline heating and ventilating unit, developed originally

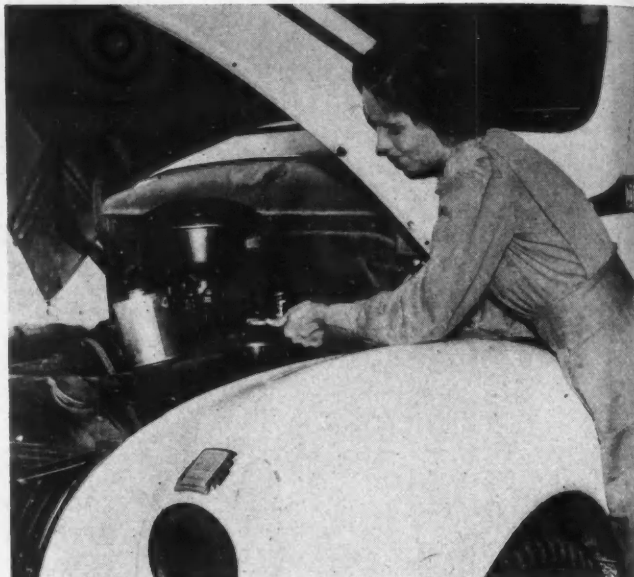


for the Army to heat mobile machine shops, tents and portable shelters. Among the applications suggested by design of the various sizes available are:

Heating and ventilating of truck and trailer machine shops; stand-by heating of engines and other equipment and protection of tool and stock storage from the effects of cold and wet weather.

Among the important advantages claimed for the heaters are: The safe and efficient use of all kinds of gasoline normally carried for truck engine use; constant forced circulation of air, which provides ventilation as well as increasing the efficiency in heating fairly large areas; extreme portability of the heating unit, which makes it convenient to carry them from one point of use to another. Unit delivering as high as 40,000 B.t.u. per hour can be carried

(TURN TO PAGE 130, PLEASE)



In this article Mr. Chivers, who maintains a 36-truck wholesale bakery fleet proves with cost figures the benefits he derived from installing oil filters and then changing cartridges instead of oil. Has your carburetion been affected by a gummy sediment clogging the bowls? Mr. Chivers has something to say about it. And in another article, to be published later, he will have much to say about his preventive maintenance system.

OUR policy in respect to crankcase lubrication is aimed at two objectives: to keep motor wear to a minimum and to conserve lubricant. As our first step toward both motor longevity and oil economy, we use the best grade of oil obtainable—a nationally-known brand. Next, the firm has equipped all fleet-units with oil filters of standard manufacture. Third, oil condition is constantly watched and oil is changed only when circumstances warrant.

We gave a great deal of thought to the subject of oil-changing before adopting our present policy in regard to it. At that time we had not yet installed filters, and were drain-

ing crankcases at 1000 miles. On that basis our records showed that we were putting in a quart of oil for each 100 to 150 miles of travel.

Our trucks did not—and do not—operate at sustained high speeds. Therefore, they were not *burning up* oil in that quantity. We were throwing most of it into the discard drum.

Out of this line of reasoning was born the belief that under proper conditions—and provided our information in respect to filters was correct—we should be able to “reclaim” crankcase lubricant, while it was still in the vehicle. And that, thereby, we could cut down considerably on our oil bill.

With this thought in mind we made long-term, exhaustive tests with oil filters of several manufactures. As the result, we decided that we were on the right track, and fixed our final choice on the two types of filter we now are using.

With oil filters on all of our trucks we discontinued the practice of periodic oil changes. Today we do not change crankcase lubricant on any fixed schedule. We seldom change the oil, except when there is occasion

to remove the pan or when an engine is undergoing major repairs.

In either case the pan and the entire crankcase lubrication-system is thoroughly flushed out with distillate before fresh oil is put in. We follow the same procedure, if a filter cartridge clogs up too quickly, indicating the presence of sludge in the crankcase. However, this situation does not develop often.

Because oil is seldom changed we make a daily check of oil color and take particular care in regard to cartridge installations. The close scrutiny of oil for signs of dirt discoloration is a part of our daily inspection of crankcase oil-levels. As soon as the lubricant is discolored sufficiently to make at all difficult the reading of markings on the oil-level indicator, the filter cartridge is replaced.

When replacing a cartridge, we are careful about installation details. After the old cartridge is removed, the filter case is thoroughly cleaned before the refill is installed. Next, a new gasket is applied and the filter-case cover is put in place and tightened.

Then, the motor is started up and

COOKING WITH GAS



The employment of testing equipment plays an important part in this fleet's maintenance set-up. Here the author is shown using a tester to check the functioning of a fuel pump

A woman "helper" has proved satisfactory in performing some of the lighter duties around the shop. Changing an oil-filter cartridge with careful attention to installation details is Mrs. Neil Jeffers, whose husband, formerly the author's assistant, is now in the Army Tank Corps

The fuel-saving result of an engine tune-up is road-checked with a gasoline mileage tester



.... and OIL

run until the new cartridge becomes completely oil-soaked. At the same time, we check the filter for oil-leakage. If none develops, the motor is stopped, and the oil-level is inspected. Fresh oil then is added to compensate for the amount absorbed by the refill.

For some time, we have been experimenting with an oil additive intended to dissolve gummy sediment in the crankcase oiling system and to keep piston rings from sticking. So far, our experience verifies manufacturer's claims, particularly in regard to the breaking down of sludge. This additive seems to return gum-bound dirt particles to the oil stream from which the filter cartridge picks them up. Even under the circumstances outlined, cartridges have a life of 4000 to 5000 miles, and, in some instances, have proved efficient for as many as 8000 miles.

The proof of any theory of this kind depends on the extent to which it pays off. Here are the results, as they show up on our books: During the past 2½ years of operation, we have maintained a fleet average of approximately 400 miles per qt. of

oil—in contrast to the 100 to 150 miles per qt. we formerly got.

How does our present policy affect the cost of mechanical upkeep? Well, let's take another look at the record. No. 7, a 1-ton, oversize-body job on an interurban route, now is between 2 and 3 years old. According to last speedometer reading, this truck has run 64,811 miles. An oil change was made at 57,550 miles and again at 62,835 miles. Our repair cost on this unit during its life to date totals \$168.91, including labor and materials. This sum is made up entirely of run-of-the-mine items, such as front-end rebushing, brake relining, spring-leaf replacements, tune-ups

Florida bakery fleet cuts itself a piece of conservation with successful no-oil-change policy and by going after gasoline with high spark

by GENE CHIVERS

Maintenance Superintendent, Fuchs Baking Co., South Miami, Fla.

and new spark plugs. Filter cartridges on this vehicle have been good for 8000 miles. Oil consumption averages 423.3 miles per qt., and fuel consumption, 10.8 miles per gal.

No. 14, a ½-ton truck, also in interurban service, has gone 110,025 miles, and now is between 4 and 5 years old. Our repair bill on this vehicle since Jan. 1, 1941, adds up to \$343.59. Of this amount, \$162.96, practically half the 2½-year total, covers accident repairs and a major overhaul.

Besides routine maintenance items, the remainder of the cost includes replacements, such as a new battery
(TURN TO PAGE 87, PLEASE)



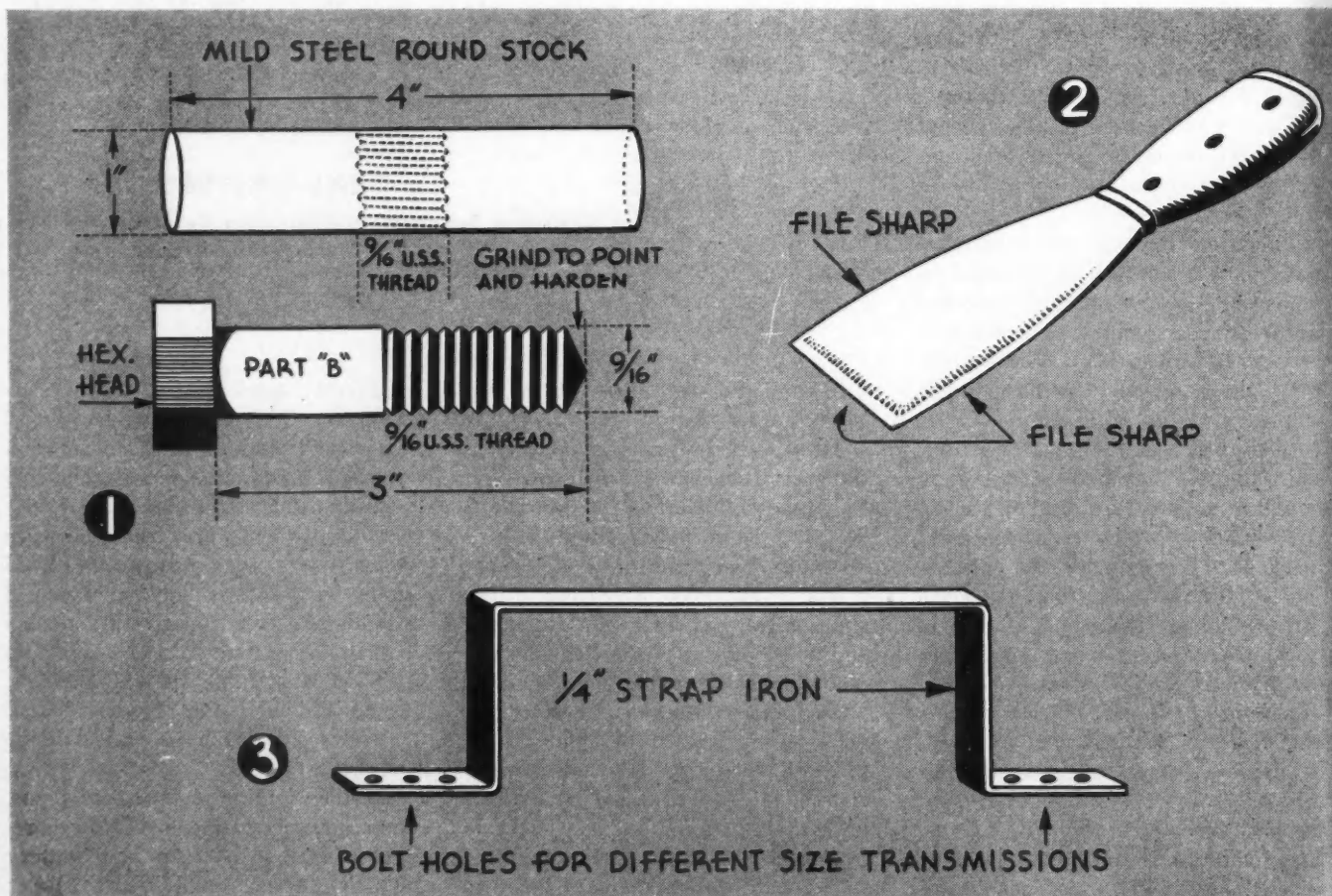
1. Universal Yoke Puller

by John J. Kavanagh,
Bronx, New York

Not being able to purchase a universal joint yoke puller to fit 1940-41 Fords, we decided to make our own. The one we made is simple, inexpensive and dependable.

The sketch is self-explanatory insofar as the make-up of the puller is concerned. Here's how the puller works: Remove the U clips on universal joint and drop the drive shaft assembly. Next remove nut on pinion shaft holding yoke in position, place puller across yoke, fasten in position with universal joint U clips and turn in cap screw with large box wrench, until the yoke comes off. This puller has worked smoothly and successfully on every job using this type yoke, both on Ford and other make trucks.

SHOP & SALVAGE



2. Gasket Scraper

by W. M. Hell,
Gulf Refining Co., Louisville, Ky.

When scraping off old gaskets and other foreign matter in close places, such as under exhaust manifolds, around valve covers, fuel pump bases and many other hard-to-reach places, a mechanic usually uses a putty knife as far as he can use forward strokes, then he uses a pocket knife to cut off that which takes side motion and where room is scarce.

I made a tool which does a better job of scraping gaskets, etc., I took a medium size putty knife and altered it so that it scrapes both forward and sideways. I filed the end and also across each side. This gave six sharp edges to scrape with, and can be used to push or swing to the right or left. This tool makes scraping a lot easier and faster.

3. Transmission Helper

by Stan Lukas,
Belfield Welding Co., Phila., Pa.

To simplify removal and replacement of transmissions from trucks, or for moving the transmission unit around the shop, we have built a gadget which we call a helper.

We made it in the following manner: First we bent a piece of $\frac{1}{8}$ -in. strap iron to the shape shown in the sketch. Three different size holes were then drilled, so that it could be used on various transmissions.

To use this handle, it is bolted to the transmission case in place of the cover. We have found that this handle makes it very easy for one man to handle transmissions, which means a lot now that help is so hard to get.

4. Steering Column Repair

by Preston R. Coleman,
Norristown, Pa.

When inspecting our trucks I ran into two jobs where the steering column was OK except that the bushing at the top of the column was worn allowing side play in the steering wheel, which resulted in noise. As it is quite a job to remove the column to replace a bushing, we devised a repair which makes a nice tight job and will last till the column might later on have to be removed for repairs.

Here's how we did the job: We used a piece of $\frac{1}{16}$ in. thick shim stock, fitted it around the steering column tube, then pushed it up between the tube and the steering wheel as far as it would go. The shim was left long enough to install a hose clamp around the shim and the column tube, so that the shim would not slip out of place. This made a tight job and eliminated all noise due to the steering wheel slapping the column.

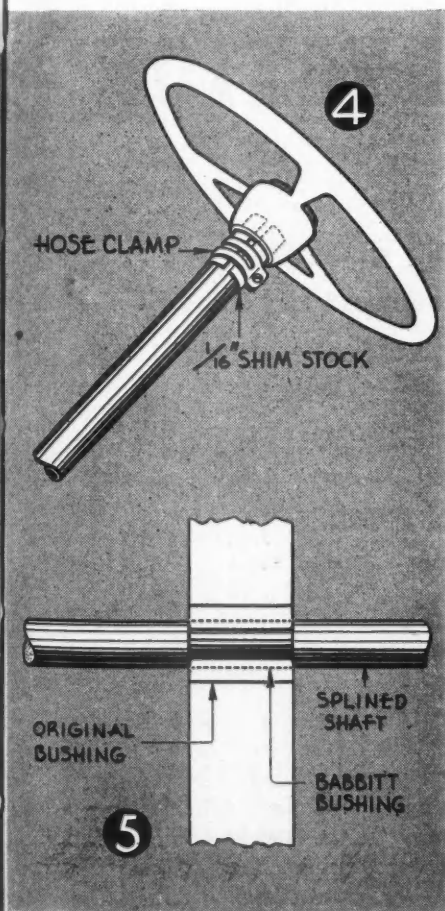
5. Salvaging Take-Off Shafts

by F. W. Green,
Oshkosh, Wis.

Due to the parts shortage, especially bronze bushings, it sometimes becomes necessary to use some other material when a bushing needs to be replaced. On some jobs it is possible to use babbitt for a bushing in place of the original bronze bushing.

Here is a method that I have used in repairing a power take-off shaft where both the shaft and the bushing were worn, and new parts could not be procured. First I removed the worn bushing and then I trued up the shaft. Next I poured babbitt in place of the old bushing, and trued up the babbitt to the same diameter as the shaft. This repair was done some time ago and it is working out fine.

HINTS



Commercial Car Journal will pay \$5.00 for acceptable shop hints and \$5.00 for unusual parts salvage tips.

Send in as many ideas as you have to the editor. Don't underestimate your ideas. Let the editor be the judge. A photograph or a rough sketch and simple explanation in your own words are enough. CCJ will polish them up for publication. Use this opportunity to earn extra money to buy Victory bonds and help win the war.

IT certainly pays dividends to keep a close watch of and an almost constant check on the performance and condition of a truck fleet—in other words, to install and keep in effective operation a good maintenance program. We have done it so long with our fleet—15 years, to my knowledge—that we do not know anything to the contrary. But, from what has come under my observation in connection with equipment we have taken over, there is all the difference imaginable in results from care and non-care.

Our fleet covers all of the territory on the east shore of San Francisco Bay, from Hayward to Richmond. We have 65 trucks, one truck-tractor and trailer and seven passenger cars. Our fleet averages an annual mileage of 576,000 in carrying on our business, which is the manufacture and distribution of ice. We operate one repair shop, which is located here in Oakland. We do all of our own work. We employ three men in our shop, one mechanic, one lubricator and a foreman, myself. When we have a major breakdown on the road—or any other kind, for that matter, unless it is one that the driver can handle by the roadside—we send out a tow car and bring the injured truck in here.

We have felt the war situation, even with our limited force, for we have lost one man to military service. We stagger our hours a trifle. I arrive at 7:30 A. M. and leave at 4:30, though frequently putting in an extra hour or more. The mechanic is here from 8:00 to 5:00 and the lubricator comes at 3:00 and stays until midnight.

We give our trucks a check-up every 1000 miles, which means about once a month.

We give the entire mechanism of our trucks a complete overhaul every two to three years. The average is about 2½ years, depending principally on the amount of mileage run. The approximate mileage at the initial overhaul is 30,000 to 35,000. Some drivers are harder on trucks than are others. By experience with them, then, we know which to watch more closely. So when the motor becomes noisy, or uses an excess of oil, we know it is time for an overhaul.

Our initial overhaul consists prac-



The author, Arthur Endres, inspecting tires and referring to the little black book in which maintenance records for each truck are kept. On next page is a typical Union unit

UNION ICE IS HOT ON CONSERVATION

**Reclaims crankcase oil, gives its tires
an average of four recaps and times
ignition to the fuel with 5-degree retard**

by ARTHUR L. ENDRES

Fleet Superintendent, Union Ice Co., Oakland, Cal.

tically of a general overhaul. We go after the spring shackles, the king pins, brakes, universal joints, drive lines and transmission. About the only thing we don't fuss with at that time is the differential. If it runs quietly, there is little use in taking it

out, because you can't get the gears exactly as they were in the first place and you are going to get a whine one way or the other. When it becomes noisy in the back end, then we look into the differential.

Our system of scheduling trucks

to come into the shop for the routine inspection is to take them in turn, giving to each truck whatever time is necessary. If there is any mechanical work done, we keep a record of it. We go over the brakes, king pins, clutch, transmission and other vital parts. I have a large book, in which each truck has a sheet of its own. (See illustration.) Even the repairs or replacements in the overhaul jobs go into this book, so that we have a complete record of work done for every year of service.

We have always carried on this maintenance program, within my span of life here, so we have nothing in our own fleet to compare results with, but we have some very striking evidence of the value of the check-up and watchfulness in the condition of a small fleet which we took over. In one of the trucks the rear end was dry, the brakes were dragging, steel to steel, and, of course, needed re-lining, besides which there were other signs of neglect. In another truck the rear axle had been loose so long that the key way in the axle was cut to about $\frac{1}{2}$ inch, where it should have been $\frac{3}{8}$, and in the hub itself there was a cut to about $1\frac{1}{2}$ inches. It cost us nearly \$150 to fix up one of them and for three weeks it wasn't operating or making any money for the company. So we have had some very concrete and impressive examples of the fact that a preventive maintenance program pays big dividends. Also, as indicating what a huge difference it makes in road failures, when we first took over this other fleet we were called out on breakdown jobs two and three times a day. Now we don't average more than one or two a week.

We're rather proud of our record in tires. Believe it or not, we average four recaps on our carcasses! Sometimes we even make it five or six times. We average about 10,000 miles on original tires and about the same on each recap. And this performance is accomplished in the face of a severe handicap. For while tires on trucks that are on the road, or the highway, get from 50,000 to 70,000 miles, we obtain only about 10,000 miles from our tires, which are on trucks traveling about town and up and down hills and which are starting and stopping constantly. How-



ever, our trucks don't travel fast and our frequent recapping helps out. We have one truck that has gone 50,000 miles on one set of tires, which have been recapped four times. We are certainly sold on the value of recapping tires. We find recaps entirely safe and dependable.

We put our recapped tires on any and all wheels of our trucks. We make no difference whatever in this regard, for we consider the recapped tires in every way as good and as serviceable as new tires. We wear our outer casings down to the white strip, just before the cord shows—that is, just before reaching the breaker strip—before we remove them for recapping. We don't leave much rubber on the carcass. We found that we might as well use the rubber that is left on the tire after it gets smooth, for after this stage in the life of the tire is reached you always have another 1000 miles of usage before it is necessary to recap and there certainly is no use in throwing that rubber away.

We have dual tires on all of our trucks and rotate them every 3000 miles. When we change, or rotate them, we change the tires on the same wheel with each other, putting the one that has been on the outside on the inside of the same wheel, and vice versa. In other words, the two that are right together, on the same wheel, exchange places. That is done when one or the other, or both have become worn on one side or the other. In this way we keep the worn edges or spots balanced. We never change tires from one side to the other of the truck itself.

It may be different driving on the highway, but with us, traveling almost exclusively in town and at slow speed, we get more wear on the inside of the tire. It might also be true with us, with so much starting and stopping, that the brake-drum heat causes expansion of the tire and additional wear.

We match our dual tires for mount-

ing. We won't put a new tire beside an old one. Instead, we match them with each other, as nearly as possible, as to wear. We check on them about once a month.

Our drivers do not check tire pressures. They're too busy with other things. So we have the night man do it. If the night man discovers a variation of 15 lb. in pressure, he reports it immediately and I change it the next morning before the truck goes out. We inspect our tires about once a month for wear and signs of abuse. This attention, coupled with our other tire watchfulness and care, has cut down our tire road failures by about half. Sometimes an entire week or more will go by without our having to change a single tire on any of our trucks. We keep records of tire changes and tire mileages in the "yearly" book I have mentioned. We send out our tire repairs.

We don't use inside patches or reliners. We have found they chafe the cords on the inside of the tire and ruin the carcass. I think we are doing everything possible to get increased mileages out of tires and to reduce tire costs. Since I took charge six years ago I have managed to cut the tire bill to less than half its previous amount. Before that we never recapped more than once.

We make special efforts to keep our engines in first-class trim to insure gasoline economy. We give our trucks an engine tune-up once a month, which is a regular routine. We check the timing, the spark plugs and other things that affect gasoline consumption and engine performance. At about every 10,000 miles we change the plugs. We use all of the instruments in these tune-ups and check-ups that we think will help us in the job, including the exhaust gas analyzer, motor analyzer, timing light and point synchronizer.

We have some pretty firm ideas and definite policies about driver education and handling the drivers. We have a maximum speed limit of 30 miles for our trucks, but we have an honor system among the drivers as to this speed limit and we also use governors. That may sound contradictory and as if we didn't do good "team work" with ourselves, so to speak, or worked at cross purposes, but

(TURN TO PAGE 38, PLEASE)

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KNUDSEN CHEMISTRY COMPANY		Mile Inspection at _____		Speedometer _____		
MOTOR VEHICLE No.	NAME _____	DATE INSPECTED				
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Spark Plugs						
Starter						
Distributor & Timing						
Generator						
Fan & Belt						
Radiator Hose & Water Pump						
Check Fuel System						
a. Choke						
b. Leaks						
c. Clean Screens						
d. Pump Pressure						
Check Oil Pressure						
a. Leaks						
Tighten Head						
& Manifold Nuts						
Check Clutch						
Battery & Cables						
Check Lights & Horn						
Check Windshield Wiper						
Branes						
a. Fluid Added						
b. Fluid or Air Leaks						
Steering						
Wheel Alignment						
a. King Pine						
b. Bearings						
c. Radius Rods						
Check Drive Line						
Check Springs for Broken						
Leaves & Tighten U-bolts						
Check Frame & Diff. for Leaks						
Check Gear Shift Mechanism						
Tighten All Wheel Nuts						
Trailer Brakes &						
Light Connections						
Mirrors & Signals						
(Use Reverse Side for Additional Remarks)						Served By—Hours _____



Leonard F. Greenburg

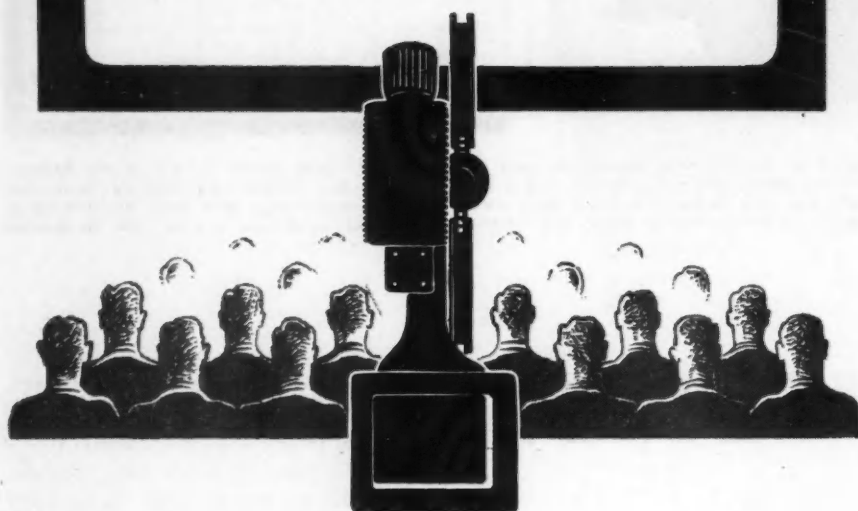
KNUDSEN
Creamery Co. is
engaged in the
processing and
wholesale distri-
bution of dairy
products. No re-
tail routes are
maintained. We

operate 220 pieces of equipment in the Los Angeles metropolitan area. San Bernardino, San Diego, Visalia. Santa Maria and Ventura areas. Of these units 161, composed of 137 medium trucks, 21 passenger cars and three heavy tractors with semi-trailers, are maintained at our main plant in Los Angeles. These units average about 120,000 miles per month.

We put into operation a complete preventive maintenance plan here at the Los Angeles plant about two years ago. It has meant a great saving in parts, gasoline, oil and time in making costly road calls. Our road calls now average only about 10 per month which, for a fleet of 161 vehicles, we feel is small indeed. In addition, it has given us such a complete record of all of our operations that we are in a position to analyze any problems which might arise.

As yet, we have not put the complete plan into effect in any of our five branches, since they have comparatively a small number of trucks and it would not be profitable to

MORE FILMS FOR FLEETS



A supplementary listing providing operators with more training material and general subjects to balance meeting program

A SURVEY made by COMMERCIAL CAR JOURNAL, last spring, disclosed that many of the leading truck, trailer, tire and automotive parts manufacturers have produced a number of interesting, educational motion pictures and slide films on subjects dealing thoroughly and authoritatively with many phases of truck maintenance and operation. It was further brought out that because these films treated their respective subjects with emphasis on proper techniques, accuracy, time saving, conservation, etc., those films could be used for manpower training. A list of such films, covering a wide range of automotive maintenance and driver training, was published in the June, 1943, issue.

Developments to date indicate that the June list barely scratched the surface. Hundreds of excellent technical training films are available to

fleet operators on as wide a range of subjects as could be desired.

Most of this material is available merely for the asking. Of course, it is expected that the fleet operator stand the costs incidental to handling the film. This item is, generally speaking, quite small. The approximate shipping weight of one reel of 16 mm. silent motion picture film, about 15 min. running time, is about 4 lb., and a reel of 35 mm. silent film averages about 13 lb. Sound film runs heavier, one reel of 16 mm., averaging about 15 min. running time, weighs about 8½ lb. Slidefilm is much lighter—a matter of ounces, except for sound slidefilms which are accompanied by a separate sound record.

The conditions under which these films are loaned have been explained in the previous article—careful handling, safe and prompt return. At

least two weeks' notice should be given—as a matter of fact, with the demand for these films constantly increasing, it would be well to give three or four weeks' notice.

A study of the following list will reveal a wide selection of subjects which, combined with the June list, should provide any fleet operator with a wealth of material—the schedules could cover almost two years of monthly meetings using three or four films per meeting. The present list has been specially selected to provide sufficient variety to insure peak and enthusiastic interest. Nothing makes a series of meetings more monotonous than a succession of "all work and no play" topics. The war films have been included to help carry a wartime, patriotic tone or morale-building theme when desired.

Conservation

IT'S UP TO US—(This appealing short production shows graphically many ways to save tires, gasoline, oil and general wear and tear.)—16 and 35 mm.; motion; sound; 10 min.; film only; transportation charges; address General Motors Corp., Dept. of Public Relations, 1775 Broadway, New York City, N. Y.

Cooling System

COOLING SYSTEM—(Explanation of the various methods of cleaning and pressure flushing.)—16 mm. motion; sound; approx. 12 min.; film only; transportation charges; address National Carbon Co., Cleveland, Ohio.

Diesel Engines

DIESEL, THE MODERN POWER—(The story of the principle and development of the modern diesel engine.)—16 and 35 mm. motion; sound; 25 min.; film only; transportation charges; address General Motors Corp., Department of Public Relations, 1775 Broadway, New York, N. Y.

DIESEL SIMPLICITY—(Shows, by animated diagrams, the principles and operation of a diesel engine and the different types of work done by it.)—16 mm. motion; approx. 15 min.; film only; transportation charges; address Caterpillar Tractor Co., Peoria, Ill.

Electrical System

THE STORY OF A SPARK PLUG—(Mining of the raw material, the manufacturing process, testing and correcting trouble due to faulty spark plugs are thoroughly covered.)—16 mm. motion; sound; 34 min.; film only; transportation charges; address Louis F. Perry, Graphic Services Section, Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

THE STORY OF A STORAGE BATTERY—(Shows historical background, theory and functions; testing, servicing and conservation of batteries.)—16 and 35 mm. motion; approx. 30 min.; film only; transportation charges; address U. S. Bureau of Mines, as above.

GOOD ENGINE PERFORMANCE—(Deals with the importance of the spark plug in relation to tune-up and engine performance.)—35 mm. slidefilm; sound; 30 min.; film only; transportation charges; address A. C. Spark Plug Division, General Motors Corp., Flint, Mich.

MADE TO TAKE IT—(Detailed manufacturing procedure of spark plugs.)—16 mm. motion; sound; approx. 40 min.; film only; transportation charges; address A. C. Spark Plug Division, General Motors Corp., Flint, Mich.

Lubrication

AUTOMOBILE LUBRICATION—(Stresses the importance of lubrication, not only in reducing friction, repairs and gasoline bills, but also in increasing driving comfort and safety. Emphasizes the fact

(TURN TO PAGE 104, PLEASE)

At right are some examples of wheel bearing abuse, showing chipped bearings, chipped outer race, worn points in cage, chipped and pitted inner race. Such premature failures can be avoided and bearings made to give long life

NOW more than ever conservation of material is vital, and wheel bearings are on the critical list. Therefore it is important that fleet operator see to it that the wheel bearings on his vehicles are not abused.

Proper care of wheel bearings will give satisfactory operation and long life; abuse will result in premature failure and will also contribute to the failure of other parts of a vehicle.

Some of the most common abuses to which wheel bearings are subjected are as follows:

1. Lack of lubrication. Many wheel bearings are wrecked due to lack of lubricant, which will cause bearings to burn out.

2. Improper adjustment. Bearings adjusted too tightly will overheat, causing lubricant to boil out and resulting in subsequent bearing failure. Bearings adjusted too loosely will pound and crystallize both rollers and cups, resulting in complete bearing failure.

3. Overloading bearings. All bearings are designed to carry a specific load, when loaded beyond that point bearings are being abused and will fail prematurely.

4. Improper mating of dual tires. Dual tires not properly mated will cause overloading on one bearing and will result in damage to rollers and premature failure of that bearing.

5. Improper inflation of dual tires. Dual tires which do not have equal air pressure will cause unequal load on bearings, resulting in eventual damage to one or both bearings.

6. Dirt. Dirt means damage to any bearing. It is probably the greatest single enemy of wheel bearings. When bearing lubricants are contaminated with dirt, metal particles or other foreign matter, a lapping action takes place which causes wear to rollers and cups and eventual failure.

7. Defective oil seals. Oil seals which are damaged may allow loss of enough lubricant from a bearing to cause serious damage and eventual failure.

8. Improper installation. Remov-



DON'T ABUSE WHEEL BEARINGS

Attention of fleetmen is called to common practices that cause premature failures and should not be tolerated today

ing or replacing wheel bearing cups by the use of a hammer, is likely to severely damage cups and result in serious damage to bearings.

9. Worn spindles or axle shafts. Installation of good bearings on worn spindles or axle shafts will cause excess bearing slippage and result in

scoring and scuffing, and ultimate bearing failure.

The next issue of **COMMERCIAL CAR JOURNAL** will contain an illustrated article on the proper methods to be used in removing, installing, cleaning, lubricating and adjusting wheel bearings.



In the handling of small parts with numerous tiny components, such as are to be found in a distributor, feminine fingers are very adept



Women don't mind doing dirty jobs and becoming as begrimed as any grease-monkey, but do insist upon being able to clean up later



Here a feminine worker is dismantling an air compressor. Women tackle jobs with more delicacy, are less inclined to slam-bang methods

IS A MISS AS GOOD AS A MALE?

Connecticut Railway & Lighting Co. says "Yes" after more than six months' experience with women mechanical workers, and in some cases finds they are better than men

by **EARL THEISINGER**
Managing Editor, Bus Transportation

WOMEN! Sure they can drive, but how about other kinds of bus work? Can they fill a mechanic's job—will they adapt themselves to shop work? These questions are being asked with increasing frequency and growing concern as the bus industry, already short of mechanical workers, faces an even greater shortage.

Such speculations and an infinite variety of others are being answered as more and more bus companies take on women. One of the first companies to answer the question, "Is a miss as good as a male?" so far as mechanics are concerned is the Connecticut Railway and Lighting Co., Bridgeport, Conn. This company's answer is "Yes"—definitely and unequivocally "Yes."

Operating a fleet of 376 buses in local, city and suburban service in



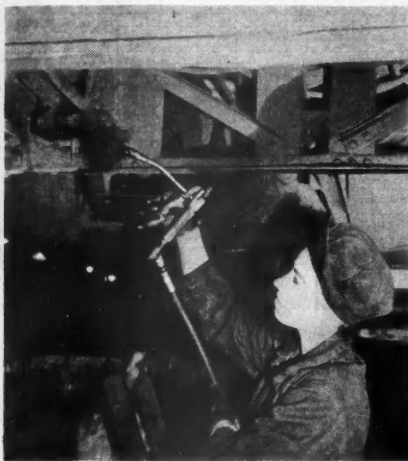
Adjusting ring prior to assembling a hydraulic clutch is not exactly light nor clean work but this young lady is quite proficient at the job



Women in the shop are taught to do three or four jobs well. Each has a specialty. This one handles windshield wipers and fare boxes



Women quickly learn the use of testing equipment and follow recommended tolerances to the letter. Here one is testing the air governor



In the pit this young woman is an expert greaser and doesn't mind the dirt. She holds her own on a foursome that includes males



House-cleaning is nothing new to most women. Twelve colored women make up the night cleaning crew and keep vehicles gleaming



Women are excellent housekeepers and quick to learn stockroom procedure but the parts must be plainly marked and bins identified



★EDITOR'S NOTE★

Here is the story of a large bus fleet that is making satisfactory use of women in maintenance work. Shop problems of bus and truck fleets are so closely related that truck fleet operators will find this account interesting, informative and valuable. Acknowledgement is hereby made to Bus Transportation for cooperatively permitting its republication.

and between Bridgeport, Derby, Waterbury, New Britain and Norwalk and to Hartford, New Haven and Stamford—all in Connecticut—this company, like all others serving highly industrialized areas, has had a tremendous increase in riding. For example, in 1942 bus miles increased 11.4 and passenger revenue 46.1 per


cent over the previous year. Increased riding materially increased the volume of mechanical work. At the same time the problem of finding enough mechanics to handle the added burden of shop work was created. These problems were complicated further by the fact that CR&L operates in three of the four New England areas

where a critical shortage of manpower has existed for a long time. There was but one alternative, therefore—women.

The precedent-shattering plunge was taken in September, 1942, when the first woman mechanical worker was hired. Since then the feminine garage force has increased to 36. These women work in the garages and shops at Bridgeport and Waterbury and are exclusive of 18 women drivers working out of the Bridgeport garage and women drivers in training in Waterbury. The women garage employees consist of eight mechanical workers, two storeroom clerks, two shifter-trainees, twelve cleaners on the day shift and twelve colored bus washers on the night shift.

The problem of employing women
(TURN TO PAGE 96, PLEASE)

P.M. CONTROL RECORD
FOR THE YEAR 1954 TO 1955




VEEDOL Preventive Maintenance Plan
COOPERATING WITH OFFICE OF DEFENSE TRANSPORTATION

INSTRUCTIONS

1. P.M. SERVICE performed on specified days from the inspection. Cost of other work added. The type of inspection, A, B or C and service performed, P.M. or P.M. or P.M. or P.M. can be entered in the proper column.

2. Entries under MAJOR REPAIRS MADE are taken from Repair Orders of repair bills, whenever repair of the indicated nature has been made.

VEEDOL Preventive Maintenance Plan
FOR MONTH OF August 1954




VEEDOL Preventive Maintenance Plan
COOPERATING WITH OFFICE OF DEFENSE TRANSPORTATION

INSTRUCTIONS

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The Veedol PM Plan is centered around five simple forms, two of which are wall charts, shown above. Heading enlargements will be found at right

SOMETHING NEW IN PM PAPERWORK

A few check marks and mileage figures are approximately all that is required to operate this thoroughly engineered but simple preventive maintenance plan

AFTER making a thorough study of a great many PM systems and programs, Tide Water Associated Oil Co. engineers have designed and developed one which they believe incorporates all the best features currently employed and introduces a couple new advantages that merit consideration. The plan was

developed for effective cooperation with ODT's campaign to keep America's 5,000,000 trucks in top condition for transporting essential civilian commodities and war goods. It was extended to Tydol-Veedol consumers and later to all truck owners, disregarding business connection. It provides the proper procedure and the

thorough periodic checks required for maximum truck life. Its advantages can be summarized as follows:

1. The plan is so simple that it functions automatically without book-keeping, filing or extensive clerical effort.
 2. It is so designed that one can see at a glance the particular kind of preventive maintenance work last done, as well as the type and time when the next inspection is due.
 3. Avoids use of skilled help for routine operations. The bulk of the inspections are all outlined in the forms and there are few, if any, that cannot be performed by unskilled help, because the forms are their own written instructions.
 4. The plan is equally effective for a few units as well as for the large fleet, and equally effective whether the operator maintains his own shop or has the work done by outside service organizations.
 5. Extremely low cost to the fleet operator.
- Officially designated as the Veedol PM Plan, it comprises three lists of specific operations, each arranged as (TURN TO PAGE 110, PLEASE)

FOR MONTH OF

1

VEHICLE NO. 1

Date	ODOMETER FINISH	Miles	Gas Gals.	Oil Qts.
1	85996	51		
	86050	54	5	

AVER. AGE

NEXT P. M. SERVICE

ODOMETER	A	B	C	Oil Ch'd.	Filter Ch'd.
86290	✓				
87312	✓			✓	✓

2

FOR THE YEAR

3

VEHICLE NO. 1

Date	ODOMETER	1000	5000	10000	20000	30000	Oil Ch'd.	Filter Ch'd.
7/15	85290				X	X	X	
8/6	86312							

MAJOR REPAIRS MADE

ODOMETER	MOTOR	Rebuilt Unit Installed
at _____ miles		
Rings <input type="checkbox"/>	Pins <input type="checkbox"/>	
Bearings <input type="checkbox"/>	Pistons <input type="checkbox"/>	
Rebore <input type="checkbox"/>		
Rings <input type="checkbox"/>	Pins <input type="checkbox"/>	
Bearings <input type="checkbox"/>	Pistons <input type="checkbox"/>	
Rebore <input type="checkbox"/>		
Breaks Relined F <input type="checkbox"/> R <input type="checkbox"/>		
" " F <input type="checkbox"/> R <input type="checkbox"/>		
" " F <input type="checkbox"/> R <input type="checkbox"/>		
Clutch Relined <input type="checkbox"/>		
" " <input type="checkbox"/>		
" " <input type="checkbox"/>		
Transmission <input type="checkbox"/>		
Rear Axle <input type="checkbox"/>		

4

VEEDOL Preventive Maintenance Plan

COOPERATING WITH OFFICE OF DEFENSE TRANSPORTATION

VEHICLE NO. 1

DATE ISSUED: 8/6/49

DATE INSPECTED: 8/6/49

MESSAGE SUGGESTED: 8/6/49

OPERATION

1. LUBRICATE—oil required.

2. FILL TO LEVEL—Crashcase (change oil if called for).

3. AIR BRAKES (if used)—check air level.

4. SPRINGS—check U-bolts & clips (check for broken bolts).

5. STEERING—check for excessive play.

6. SPARE PLUGS—check, adjust or replace as needed.

7. AIR CLEANER—inspect and service, if needed.

8. OIL FILTER—inspect or replace (see instructions above).

9. CRASHCASE VENTILATOR—clean screen.

10. SPARK PLUGS—check for wear and replace as needed.

11. FUEL INJECTION—check for proper operation.

12. BATTERY—check for proper operation.

13. WATER PUMP—check for proper operation.

14. CLUTCH—check for proper operation.

15. LIGHTS—check for proper operation.

16. TIRE—check for proper operation.

17. WHEELS—check for proper operation.

18. TRACTOR-TRAILER—check for proper operation.

19. ROAD TEST—check for proper operation.

20. COMPRESSION TEST—check for proper operation.

21. FORD DOD FLAT—check for proper operation.

22. FURTHER WORK NEEDED—check for proper operation.

23. MATERIAL USED—check for proper operation.

24. LABOR—check for proper operation.

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Above are enlargements of the column headings of the two wall charts at left. After starting the plan with Schedule C, as explained in the text, first step is entry on PM Control Record, enlargement 3. Next entry is shown at 2

The other three forms in the Veedol PM Plan are shown above. They are marked as Schedules A, B and C. These are of standard 8 1/2 x 11-in. size, printed on tough card stock. The Drivers Daily Report, upper left, is the only form the fleet operator is required to supply to put the plan into operation. All operations of Schedule A are on one side. Schedules B and C are continued on the reverse side, as shown to the right of the respective cards. Other details are explained in the article

HOW TO MAKE DEFERMENT APPEALS

What to do and what not to do when a local board refuses to grant deferment to a worker who is listed on a Replacement Schedule



Jack R. Lewis

by JACK R. LEWIS

Safety & Personnel Director, Davidson Transfer & Storage Co., Baltimore, Md.

OFTEN I am asked "What do you do when a local board refuses to grant deferment to a worker who is listed on your Replacement Schedule?"

It does happen and often, too. Local boards will adopt what we think is an arbitrary stand and place a registrant in 1A for the purpose of induction. We are concerned and naturally so. Weren't we told by Selective Service that a Replacement Schedule would permit the "orderly withdrawal" of our men? We feel we are placed in a position similar to that of the inebriated gentleman who, upon arriving, found he was in jail. He shook the bars and cried out, "They can't do this to me!" Yet they had.

Of course, the similarity to the inebriated gentleman stops there. All he lost, momentarily, was his freedom. We are fearful we will lose an essential worker before his time expires. So we, too, cry, "They can't do this to us," but—still they do.

Originally Director Hershey was directed to create local draft boards in communities throughout the country. Men were chosen who were leaders in their community and who had the respect of their fellow citizens. They were individuals who by their mode of living had conclusively proven they were conscientious, righteous, law abiding citizens. The local board consisted of a chairman, a chief clerk and two other members. The chairman and his two associates

passed on the problems of drafting men from that community. In the main, these men have performed a thankless task. There is no attendant glory. Criticism, yes—abuse and condemnation — constantly directed to them. But still they perform their unpleasant duties. It is equally hard for these men when they learn a registrant, sent by their board to the Armed Forces, is killed in action. They, too, suffer their share of the mental anguish. Wasn't it their action that sent that man to the army? Sure we can say "They were unreasonable in this case or that case" when they refused deferment—but I say the few injustices they may commit are without malice and certainly unintentional.

Director Hershey appointed a State Director in each state. He in turn appointed his assistants. All are Army and Navy men familiar to a great extent with industrial job classifications. It is a part of their duties to guide and to assist local boards in the interpretation of the various memorandums sent out by National Headquarters.

With the entrance of the Replacement Schedules, which became so popular in December of 1942 and January of 1943, the job of State Directors and their staffs became intensified. Drawing upon their knowledge of job classifications and job evaluation, they were able to agree with employers upon a reasonable training period for replacements for men who would be called into the Armed Forces. Their replacement time or, shall we say, "that period of grace" extended to employers for securing and training other workers for the job, was, in every case I have personally come in contact with, certainly reasonable and fair. Understanding, friendliness and sympathy with the employer's personnel problems, created by the man-power drain, has been a paramount consideration with them.

Regardless of National Headquarters and State Selective Service Headquarters, too, local draft boards *have* and *hold* "Local Autonomy." If fleet operators will recognize this fact, they will make their job on deferment requests more pleasant. And, too, they can make it a simpler matter for their State Director to assist when necessary. Or, they can make his task much more difficult.

(TURN TO PAGE 95, PLEASE)



Building for a Better World Tomorrow

.... and a New Day in Vacuum Power Braking

Born on the eve of Pearl Harbor, a new Bendix B-K* Vacuum Power Braking system is now helping make history on world battlefronts.

Because of its amazing simplicity, ease of installation and maintenance, this revolutionary new Bendix development was immediately drafted by Uncle Sam for his fighting vehicles. For the duration, the entire production goes (as it should) into the tanks, half-tracks, trucks and other military vehicles that will help win the war.

But, there is a new day coming.

Victory and Peace will bring many better things for civilian life—including this new Bendix* braking system and other Bendix products of important value to the automotive industry.

Meantime, Bendix is not forgetting that part of its fighting assignment is to help service men keep war-essential civilian trucks, buses and passenger cars on the job.



BENDIX PRODUCTS DIVISION
South Bend, Indiana

*Trademark of Bendix Aviation Corporation

**BUY MORE
WAR BONDS**

STROMBERG* CARBURETORS • BENDIX B-K* VACUUM POWER BRAKES
BENDIX* BRAKES • BENDIX-WEISS* UNIVERSAL JOINTS • BENDIX* CLEANERS

ATA ESTIMATES EQUIPMENT NEEDS

Committee gives ODT a schedule of 128,167 vehicles through '44 for for-hire carriers and urges additional units for other users

THE War Planning Committee of the American Trucking Associations, Inc., has submitted to the WPB and the ODT a schedule listing the requirements in new equipment and parts for the current year and through 1944, for the motor carrier industry.

In essence the schedule and accompanying recommendations are as follows:

1. That the schedule for the second half of 1943 production of 7500 heavy duty trucks be changed so that types of equipment to be made will conform with the motor carriers needs.

2. Request the WPB to abandon a plan which would require trailer manufacturers to build only a vehicle in which the chassis must be fitted with a body instead of the present vehicle in which chassis parts are integral with the vehicle.

3. Advise the ODT that the manufacture of 128,167 vehicles, for the period through Dec. 31, 1944, is absolutely essential for the for-hire branch of the industry to carry on with the added burdens placed upon it.

4. Request the WPB to set up a trucking industry advisory committee to keep it posted on future developments and needs.

5. Request the ODT that when new equipment is made, it be released to essential use as completed, rather than placed in a reserve pool as has been done heretofore.

6. Submit to the WPB a list of critically needed parts for repairs or replacement.

The committee supplied the WPB a list of automotive parts for which demand has reached critical stages in the light of spotty shortages through-

out the country. The list included the following: All types of gears, king pins and bolts, pistons and rings, valves and guides, differential parts, steering assembly parts, cylinder heads, fuel pumps and parts, radiators and hose, rear axle housings, ignition parts, water pumps, tie-rod ends, universal joints, timing gears, mufflers, tail pipes, ring and pinion gears, crankshafts, engine blocks, wheels, electrical parts, clutches and parts, engine sleeves, carburetor parts, bearings, speedometer parts.

The committee in its formal presentation to ODT's Division of Motor Transportation, said:

"In developing these figures, the committee feels that it is the very rock bottom in the way of new equipment. We hope that every effort will be made by the ODT to see that these vehicles are scheduled for production and made available during the period covered."

It was pointed out that the committee in working out its recommendations "took into consideration not only badly needed replacements but also additional equipment that would be necessary to handle an expected increased volume."

It should be noted that the committee's schedules and recommendations apply only to for-hire carrier requirements. This is so because adequate statistics showing breakdowns as between different groups of the private carrier field were not available to the extent the committee felt necessary in arriving at accurate estimates. The ATA committee felt that adequate addition should be made to the estimates to take care of the needs of farm trucks and all other forms of private motor carriage.

Requirements for Replacements and Additional Equipment by For-Hire Motor Carriers Certificated and Permitted by the Interstate Commerce Act for Period Ending December 31, 1944.

Type and Weight Group	Number Now Operated	Replacements %	Replacements Number	Additions %	Additions Number	Total of Replacements and Additions
TRUCKS:						
Medium	61,908	22.8	14,115	10.0	6,191	20,306
Heavy	23,388	23.0	5,379	10.0	2,339	7,718
TRACTORS:						
Medium	22,512	27.9	6,281	15.0	3,377	9,658
Heavy	34,124	30.0	10,237	15.0	5,119	15,356
SEMI-TRAILERS	72,743	18.5	13,457	15.0	10,911	24,368
FULL TRAILERS	2,741	16.6	455	15.0	411	866
TOTAL UNITS	217,416					78,272

Requirements for Replacement Equipment of All For-Hire Carriers Other Than Those Certificated and Permitted by Interstate Commerce Act for Period Ending December 31, 1944.

Type and Weight Group	Number Now Operated	Replacements %	Replacements Number	
TRUCKS:				
Medium	164,650	17.0	27,991	
Heavy	64,040	17.0	10,887	38,878
TRACTORS:				
Medium	15,680	14.0	2,195	
Heavy	23,524	15.0	3,529	5,724
TRAILERS (semi and full)	58,806	9.0	5,293	5,293
TOTAL UNITS	326,700			49,895
GRAND TOTAL	544,116			128,167

Without batteries...war machines are useless!



1. Bomber 2. Destroyer 3. Submarine 4. Landing Barges 5. Troop Transport Trucks 6. Supply Trucks 7. Self-propelled 155 mm. Gun
8. Tanks 9. Jeep 10. "Walkie-talkie" Communications

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our armed forces. Significant of our part in the war effort are the Army-Navy "E" pennants, with two stars, that fly over our plants in Philadelphia.



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ODT NEWS

Arnot Succeeds Rogers in ODT as Director of Motor Transport Division

Harold C. Arnot, regional manager of the ODT Motor Transport Division in San Francisco, has succeeded John L. Rogers as Director of ODT's Division of Motor Transport. Mr. Arnot was Director of Region 9, comprising Arizona, California, Nevada and Oregon.

In his new position Arnot will have charge of the administrative duties of the Division of Motor Transport and will report to Mr. Rogers, who was appointed Assistant Director of ODT in a simultaneous move.

Mr. Arnot was born in Spokane, Wash., June 13, 1899. He attended school in California and on completion of a course in business administration entered the service of Fageol Motor Co., Oakland, Cal., in 1918. Starting as cost accountant, he advanced to the positions of purchasing agent, assistant to Frank R. Fageol and Pacific Northwest Manager.

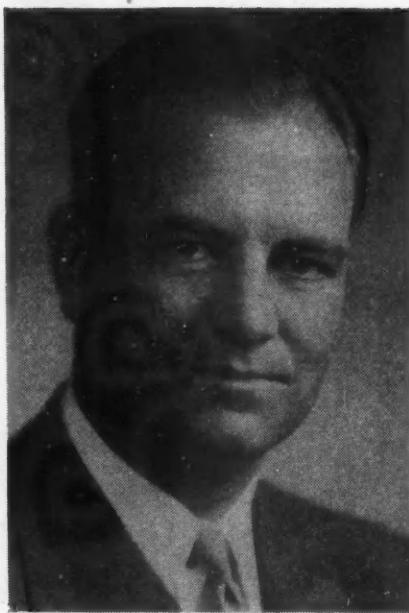
He was appointed vice-president and general sales manager of the Fageol Truck & Coach Co. in 1934 and 1935 organized and became president and general manager of the Fageol Motor Sales Co., Seattle, and represented Diamond T, Sterling, Studebaker, Divco Twin & Twin Coach in the Pacific Northwest.

Mr. Arnot accepted appointment as District Manager of ODT, Division of Motor Transport in May, 1942, and was made regional manager at San Francisco in September, 1942.

In his first official action affecting fleet operators Mr. Arnot established a new selective monthly report procedure for certain truck operators, which will replace the quarterly operation reports which were previously required of all fleet operators.

The operators who will have to file the monthly reports will be selected by ODT, all other operators will be required to keep information regarding their operations but will have to file it only at the request of ODT. The truckers who will be required to make the report will vary according to any existing conditions which might affect motor transport. The new reports will consist of a few simple questions and will be filed on cards of post-card size.

Mr. Arnot told *COMMERCIAL CAR JOURNAL* that his reasons for insisting on the reports being filed on a monthly basis was to insure ODT having more current infor-



mation, enabling them to cope more quickly with any possible breakdown or any other problems affecting motor transport and its connection with the war effort. Under the old system of filing quarterly reports Arnot said that ODT received information, regarding number of vehicles, miles traveled, tons or gallons carried, fuel consumption, idle equipment, which might be as much as five months late. He also felt that the simplification brought about by instituting the monthly reports would be welcomed by truck operators.

The new director of the Motor Transport Division also said that he anticipated no immediate policy changes or reforms within the division for, at present, he is cleaning up the business of his old position in addition to the directorship of Motor Transport.

Rogers Made Eastman's Assistant

Joseph B. Eastman, Director of Defense Transportation, has named John L. Rogers, who has been Director of the ODT's Division of Motor Transport, as Assistant Director of the ODT. His functions will be to assist and advise Mr. Eastman, to have

general charge of all matters relating to motor trucks, subject to Mr. Eastman's direction, and to perform such other special duties as may be assigned to him from time to time.

Selective Monthly Report Procedure Adopted by ODT

To maintain an accurate check on current truck operations in the Nation, the Office of Defense Transportation has established a selective monthly report procedure for certain truck operators.

The new procedure will replace the quarterly operation reports previously required of all fleet truck operators.

First monthly report under the new procedure will cover July operations. It will be due August 10.

ODT is now deciding which group of truck operators will be required to file the monthly reports beginning with July. Those operators will be notified by mail before August 1.

The number and group of truckers who will be required to make the monthly reports will vary according to conditions.

Thus, for example, if conditions foreshadowed a breakdown in the farm truck movement, either locally or nationally, reports could be required of certain motor carriers hauling foodstuffs.

On the basis of the information received, the ODT would then undertake to insure sufficient motor fuel, parts, manpower, vehicles, or whatever else was necessary to prevent a transportation breakdown.

In addition to enabling the ODT to assist the transportation industry in obtaining an adequate amount of working supplies and equipment, the reports will also make it possible for the ODT to maintain current checks on the efficiency of truck operations, the effects of ODT orders and regulations, freight movement trends and truck gasoline consumption, both individually and nationally.

Because of the change in reporting procedure it is important that all truck operators maintain accurate, up-to-date operation records, the ODT emphasized.

The form to be used in making these monthly reports will consist of a few simple questions on the trucker's motor fuel consumption, mileage, total freight transported and vehicles idle.

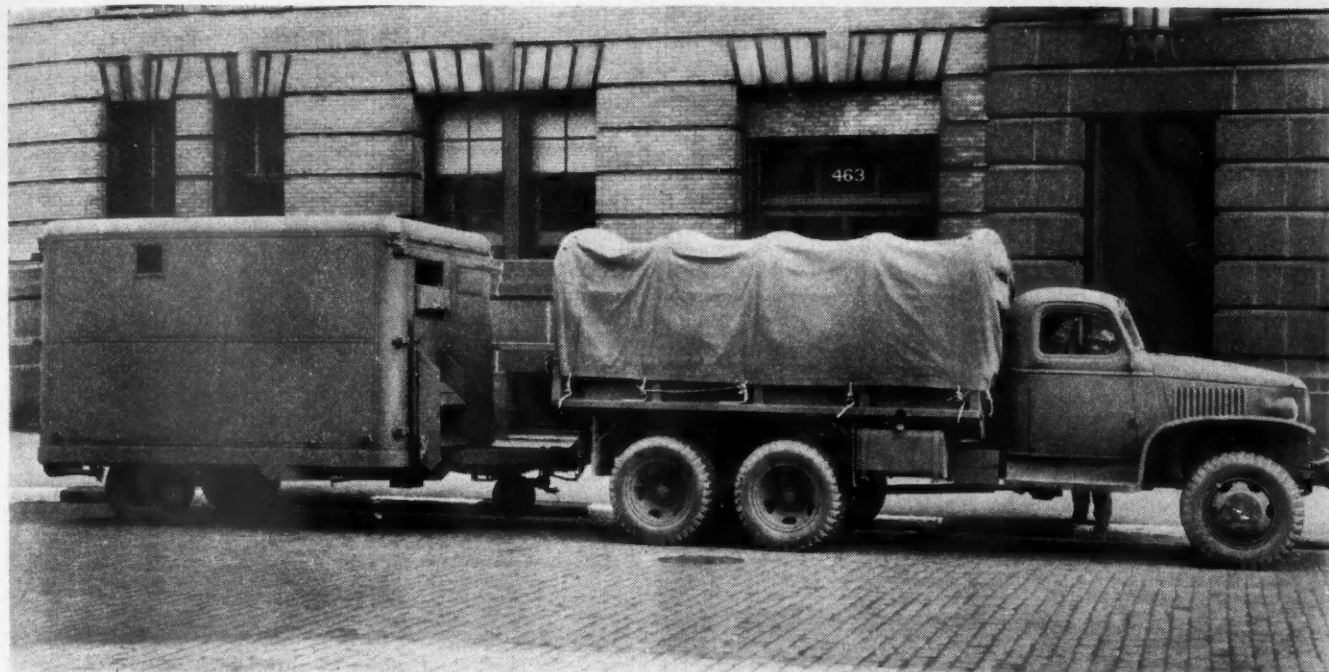
Adoption of the new procedure, however, will not relieve fleet operators from filing current second quarter reports, the ODT said.

All fleet truck operators will be required to report gallons of motor fuel consumed and total miles operated during the second quarter. And with only a few exceptions, all fleet operators will have to report total property carried on their quarterly report.

However, a fleet operator may be exempted from furnishing certain other information, now required by the quarterly report, on appeal to his local ODT district manager.

The currently required quarterly report covers April, May and June and must be filed by all operators of three or more trucks by July 31.

Only questions which cannot be waived
(TURN TO PAGE 64, PLEASE)



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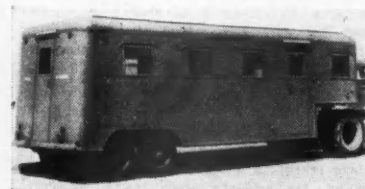
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With savings of from 15% to 40% in steel in building combat bodies, made possible by the use of the Lindsay Structure method of construction, our limited supply of steel is being stretched to make extra units.

Lindsay Structure stretches steel, too—to get all the strength in light sheet steel. That's why Lindsay Structure frameless trailers are in successful use by the U. S. Army. They withstand the blistering heat of the desert . . . the cold of the arctic . . . the humidity and termites of the jungles . . . the strain and wracking of operation over shell holes, rocks, and soft sand.

Lindsay Structure combat bodies can be shipped k.d. in minimum space. That's a vitally important extra value of Lindsay Structure today when supply lines are thousands of miles long . . . and cargo space so urgently needed.

If you have problems of weight or strength or shipping space in connection with the essential housings, partitions, buildings, or combat bodies that you are building . . . investigate Lindsay Structure. Lindsay and Lindsay, Adams-Franklin Bldg., Chicago, Ill.; or 60 E. 42nd St., New York, N. Y.



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LINDSAY STRUCTURE CAN SAVE THOUSANDS OF TONS OF STEEL PER MONTH

ODT NEWS

(CONTINUED FROM PAGE 62)

are those on motor fuel consumption and miles operated. Questions on the amount of freight carried may be waived only for fleet operators of the following types of trucks:

(a) Service vehicles (trucks used primarily to carry repairmen and their tools, and only incidentally used to carry pay loads).

(b) Vehicles engaged in intra-plant operations (including intra-farm and intramine operations).

(c) Vehicles used in the transportation of property used, or to be used, on construction projects when such operations are within the limits of the construction project.

(d) Vehicles operated for the public health and safety, or by public utilities.

Curbs Eased for Eastern Florists

The ODT has eased certain retail delivery restrictions now in effect in the Eastern gasoline shortage area for florists who reduce the mileage of their retail delivery trucks to 30 per cent of that operated during the corresponding calendar months of 1941.

For florists who make the mileage cut, retail package size and weight delivery restrictions were eased to a minimum of 3 lbs. or 42 inches in combined length and girth instead of the 5 lb. or 60 ins. minimum now in effect for most other commodities.

The ODT action was contained in General Permit ODT 17-25, effective today.

The original ODT delivery restriction order provided that florists may make one retail delivery per week from one point or origin to one point of destination. Today's permit allows florists who make the mileage cut to make two weekly retail deliveries, provided the destination is a hospital.

Job Shifting Is Manpower Problem

Members of the Manpower Committee for the Trucking Industry, in conference with officials of the ODT, agree that the shifting in employment is largely due to transfers to other jobs rather than to Selective Service calls. Figures show that only about 13 per cent of the current labor separations in the industry result from men leaving their jobs to join the armed forces.

Because employment stabilization programs are operated on a voluntary basis the committee was told it is essential that local groups of employers and employees assist in the development of stabilization programs and support their administration.

Col. George Baker, chief of the Manpower Division of the War Manpower Commission, told the committee that there is little chance that many young men holding skilled jobs in industry will be deferred, and advised industrial representatives to be prepared to replace these men as rapidly as possible.

Optional Restrictions for Peddlers in East

An optional set of restrictions on motor trucks, used for certain retail peddling in the East Coast gasoline shortage area was announced by the ODT. Under the optional general permit, the ODT will allow peddlers using motor vehicles to make retail deliveries regardless of the size and weight of the packages delivered, and to make calls to obtain orders for future delivery, provided two restrictions are met. These are:

1. Operate not more than one day in each two calendar weeks over each delivery route or area previously established under ODT orders.

2. Load each truck with merchandise which consists of no more than 10 per cent, by weight, of commodities which are restricted to one retail delivery a week (i.e.: beer, candy, soft drinks, cigarettes, ice cream, cut flowers, etc.)

These restrictions are optional. If a peddler does not conform to these restrictions, he must comply with the restrictions contained in the ODT's original retail delivery restriction order, General Order ODT 17, Amendment 3A. This order permits only a limited number of weekly retail and wholesale deliveries of certain commodities and places a size and weight limitation on retail delivery of all except a few commodities. The ODT's action was taken in General Permit ODT 17-26.

ODT Permit Covers 21 Technicality

The ODT has amended General Order 21 to permit commercial motor vehicle operators to use their vehicles without having Certificates of War Necessity on them, when the Certificates are in the possession of the ODT or the Office of Price Administration.

GENERAL ORDER ODT 6A (LOCAL CARRIERS)

PART 501—CONSERVATION OF MOTOR EQUIPMENT

Subpart E—Local Carriers of Property Collection and Delivery; Local Cartage Service

§ 501.20 GENERAL OUTLINE. This order provides that each carrier of property which operates motor trucks for compensation within an urban area, as described in the order, shall eliminate wasteful operations, conserve motor vehicles, equipment and facilities used in conducting the business of such carriers, and shall lease trucks to the extent necessary to accomplish any of the purposes of the order. It also provides, subject to certain exceptions, that no person shall cause to be made and no such carrier shall make: (a) Any collection or delivery during any calendar day, the order for which shall have been received after 3 p. m. during such day; (b) Any collection or delivery without ascertaining, prior to the operation of a truck for such purpose, that it may be completed; (c) Any call with a motor truck except for the purpose of collecting or delivering property or servicing, maintaining, or repairing a truck; or (d) more than one collection during any calendar day from any one point, nor more than one delivery during any calendar day to any point from any one point. Provision is made for the issuance of special or general permits to meet specific needs or exceptional circumstances or to prevent undue hardship.

The order further provides that two or more of such carriers may take joint action to accomplish the purposes of the order by any method or methods recommended or approved by the Office of Defense Transportation. The Director, Division of Motor Transport, Office of Defense Transportation, may direct

Joint Action Plan Made Mandatory

The Office of Defense Transportation has moved to prevent the threatened dissolution of a joint action conservation plan of 23 dairies serving routes in the Calumet, Indiana-Illinois, area.

Under the plan, approved by the ODT last August, the dairies agreed to serve all retail customers on an every-other-day basis, to make call backs or special deliveries, and to make no deliveries before 8 o'clock in the morning.

But when approval was given on August 21, 1942, two of the participating dairies adopted some of the provisions, but did not conform to certain others, principally the one which provided for alternate day deliveries. They did try this provision for two days, but abandoned it.

To protect the patriotic action of those dairies who curtailed services to conserve manpower, trucks and gasoline, the ODT has issued the plan as a mandatory order.

Peddler Permit Added to ODT 17

Special provision for peddlers who sell directly from their trucks was made by the ODT under ODT order No. 17, which has limited the minimum size of packages to be delivered by motor vehicle to consumers and the frequency with which such deliveries may be made.

The ODT's action, taken in General Permit ODT 17-24, will allow a peddler to take his truck out once per day to one sales location of his selection and transact his business from that spot only. The same sales location may be used only twice within any week, however, and the peddler operations must occur within the boundaries of the municipality. In addition, Sunday operation of the peddler trucks is prohibited.

rect such carriers to meet for the purpose of formulating such a plan of joint action.

This order supersedes General Order ODT 6, as amended, and General Permit ODT 6-5, General Permit ODT 6-8 and General Permit ODT 6-9.

§ 501.21 APPLICABILITY. The provisions of this order shall be applicable only within the continental United States.

§ 501.22 Elimination of waste. Each local carrier shall:

(a) Eliminate wasteful operation;
(b) Conserve and properly maintain tires, motor trucks, and other facilities necessary in conducting the business of such carrier;

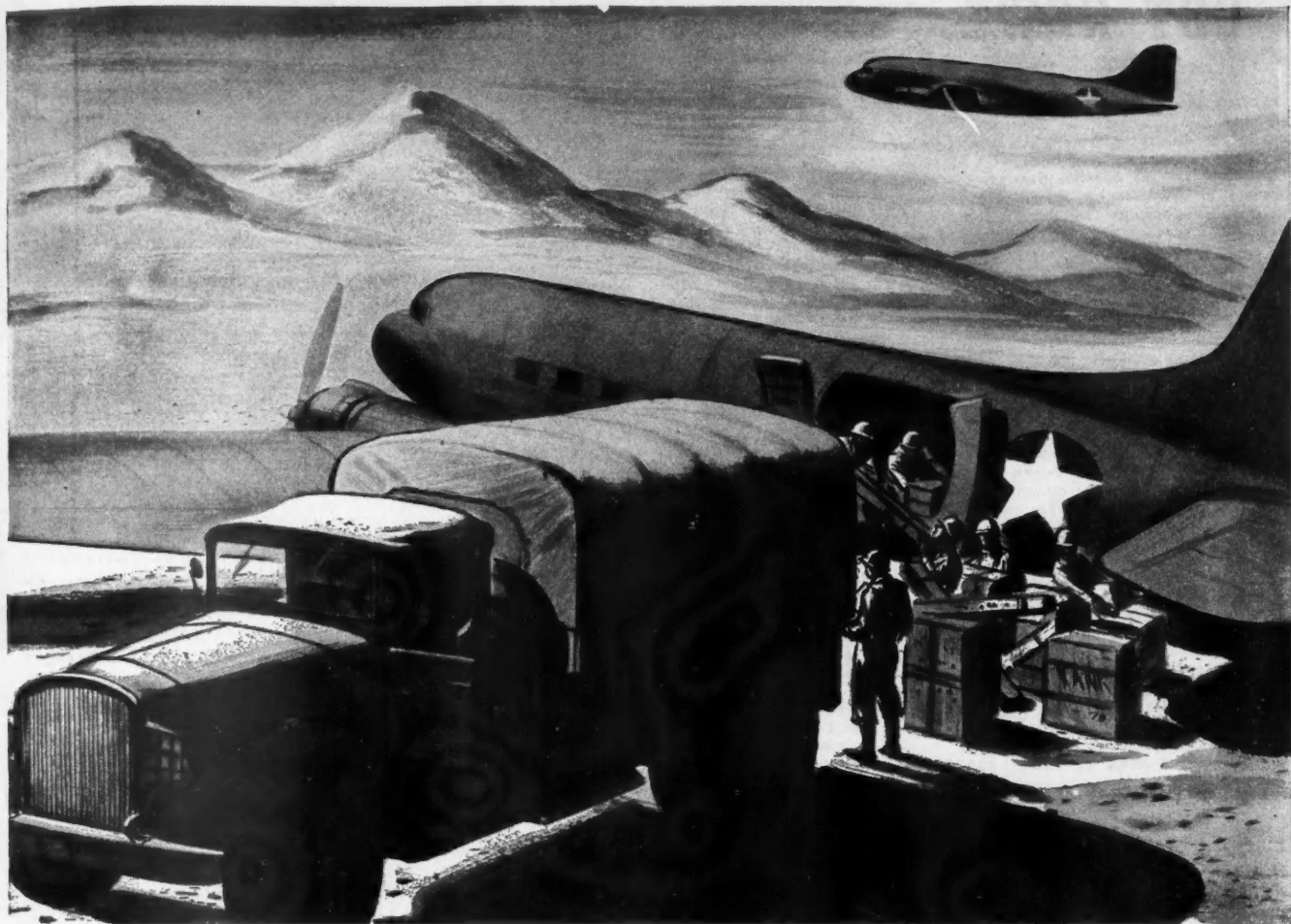
(c) Lease or rent its motor trucks whenever practicable and to the extent necessary to carry out the purposes of this order.

§ 501.23 OPERATING REQUIREMENTS. (a) Except as provided in paragraph (b) of this § 501.23, no person shall cause to be made by local carrier and no local carrier shall make:

(1) Any collection or delivery during any calendar day, the order for which shall have been received during such day after 3 p. m., or such earlier time as the carrier may establish with the approval of the Office of Defense Transportation;

(2) Any collection from, or delivery to any shipping or receiving point at which no regular hours for shipping or receiving are maintained unless such carrier, prior to the making thereof, has ascertained that he may relinquish or take possession of, as the case may be, the property which is to be transported;

(TURN TO PAGE 66, PLEASE)



YOU SAID IT, SOLDIER

"The lumbering unprotected C-47's have become the aerial Mack trucks of this war in North Africa"

—from "Stars and Stripes", the soldiers' newspaper

If you've ever seen a Mack in action, you know why Stars and Stripes' soldier-reporter called those husky Douglas Skytrains "Mack trucks". For years, Americans have used the word "Mack" as an adjective to mean the best in cargo-carrying dependability.

Soldiers learned to respect Mack trucks in the last war. They watched Macks plow through Argonne mud so deep you couldn't see the wheels. In World War II, they're seeing even better Macks take even bigger loads through worse mud—and through shifting sand and freezing snow as well. They know a Mack will haul whatever you've got wherever you want it to go!

Yes, the soldiers in this war, too, will know what the phrase "Built Like a Mack" really means!



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FOR EVERY PURPOSE**

ONE TON TO FORTY-FIVE TONS

BUY U. S. WAR BONDS

IF YOU'VE GOT A MACK, YOU'RE LUCKY...IF YOU PLAN TO GET ONE, YOU'RE WISE!

ODT NEWS

(CONTINUED FROM PAGE 64)

(3) Any operation by a motor truck for a purpose other than is necessary in connection with the collection or delivery of property or the servicing, maintaining, or repairing of a truck;

(4) More than one collection from any one point of origin for transportation to any one or more points of destination, or more than one delivery by transportation from any one point of origin to any one point of destination during any calendar day: PROVIDED, That,

(i) Additional collections or deliveries may be made when the property to be transported exceeds the capacity load of the motor truck engaged in such service, in which event each collection or delivery, except the final one, shall be a capacity load;

(ii) One additional collection or delivery may be made on a day next preceding a national holiday (when such holiday falls on a Saturday), or on the Saturday next preceding a national holiday (when such holiday falls on a Monday), provided such carrier does not make any collection or delivery on such holiday, or when the collection or delivery involves property requiring the use of a motor truck especially adapted for and used exclusively in the transportation of such property, and of a type not used in making the other collection or delivery.

(b) Any such carrier, while making any collection or delivery not prohibited by the terms of this § 501.23, may make any collection or delivery which is made without operating such truck any additional distance.

§ 501.24—SPECIAL OR GENERAL PERMITS. The provisions of this order shall be subject to any special or general permit issued by the Office of Defense Transportation to meet specific needs or exceptional circumstances, or to prevent undue hardship.

§ 501.25 SUBMISSION OF PLANS FOR JOINT ACTION. (a) Whenever two or more local carriers contemplate joint action, or whenever directed in writing so to do by the Director, Division of Motor Transport, Office of Defense Transportation, such carriers shall meet, or cause their representatives to meet, for the purpose of formulating a plan of joint action to the end that maximum utilization of equipment and facilities may be effected during the period of war emergency by such method or methods as may be recommended or approved by the Director of the Office of Defense Transportation.

(b) Whenever two or more carriers shall have voluntarily formulated a plan of joint action, they shall submit such plan to the Office of Defense Transportation.

(c) Whenever such Director, Division of Motor Transport, shall have directed such carriers to meet for the purpose of formulating a plan of joint action, they shall, within such time as may be fixed by such Director, submit to the Office of Defense Transportation any plan of joint action so formulated, or a statement setting forth the reasons why no plan of joint action has been agreed on by them: PROVIDED, That nothing contained in this order shall be so construed as to authorize any carriers to engage in such joint action unless directed so to do by specific order of the Office of Defense Transportation.

§ 501.26 RECORDS AND REPORTS. Every local carrier shall prepare and maintain such records, and make such reports, as the Office of Defense Transportation may prescribe subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942. Such records shall be available for examination and inspection at all reasonable times by an accredited representative of the Office of Defense Transportation.

§ 501.27 FILING OF TARIFFS. Every local carrier required by law to file tariffs or schedules of rates, charges, rules, regulations and practices shall file forthwith a copy of this order with the appropriate regulatory body or bodies having jurisdiction over any operations affected by this order, and likewise shall file and publish in accordance with law, and continue in effect until further order, tariffs or schedules or appropriate supplements to filed tariffs or schedules, setting forth any changes in rates, charges, rules, regulations and practices of the carrier which may be necessary to accord with the provisions of this order; and forthwith shall apply to such regulatory body or bodies for special permission for such tariffs, schedules, or supplements to become effective on the shortest notice lawfully permissible, but not prior to the effective date of this order.

§ 501.28 EXEMPTIONS. (a) The provisions of paragraphs (a) (1) and (a) (4) of § 501.23 of this order shall not apply in respect of:

(1) Any motor truck while being operated to make a collection or delivery of any shipment, the expedited movement of which is necessary to meet the needs of the military or naval forces of the United States, the United States Maritime Commission, or the War Shipping Administration;

(2) Any motor truck while operated exclusively in connection with the construction and maintenance of essential telegraph, telephone, organized radio communications, electric light and power, gas or water supply utilities, pipe lines, railroads, street railways or public highways;

(3) Any motor truck while being operated exclusively in making deliveries to a vessel which is being supplied, repaired, loaded or unloaded;

(4) Any motor truck while being operated exclusively in the collection or delivery of household goods as defined by the Interstate Commerce Commission in "Practices of Motor Common Carriers of Household Goods" (17 M. C. C. 467);

(5) Any motor truck while being operated in the collection from one consignor, or delivery to one consignee, of any shipment, or shipments, of property, the aggregate weight of which is 10,000 pounds, or more, or which fully occupies the load bearing space of such truck and which will be, or has been, as the case may be, transported by such truck, without other handling, in over-the-road service.

(b) The provisions of § 501.23 of this order shall not apply in respect of:

(1) Any special equipment;

(2) Any motor truck while operated exclusively in the transportation of repair or service personnel and their supplies or equipment;

(3) Any motor truck while operated exclusively in emergencies for the purpose of making collection or delivery of medicines or other supplies or equipment necessary for the protection or preservation of life, health or public safety;

(4) Any motor truck while operated exclusively pursuant to governmental order, regulation or contract for the purpose of collecting or disposing of sewage or garbage, or rendering other sanitation services;

(5) Any motor truck while operated exclusively for the purpose of making collection or delivery of telegraph, radio and cable communications, or the United States mail.

(c) No provision of this order shall apply in respect of:

(1) Any motor truck, the primary carrying capacity of which is occupied by a mounted tank or tanks;

(2) Any motor truck controlled or operated by any person or persons principally engaged in farming, when used in the transportation of agricultural commodities or products thereof from a farm, or in the transportation of farm supplies to a farm;

(3) Any motor truck while operated under the direction of the military or naval forces of the United States or State military forces organized pursuant to section 61 of the National Defense Act, as amended.

(d) The provisions of this order shall apply to the operations of a contract carrier only to the extent that such operations are not governed by the provisions of General Order ODT 17, as amended.

§ 501.29 DEFINITIONS. As used in this order (§§ 501.20 to 501.30, inclusive), or in any order, permit, recommendation, certificate or regulation issued hereunder, the term:

"Property" means anything, except persons, capable of being transported by motor truck.

"Local carrier" or "carrier" means any person, regardless of the designation of such person under any Federal or State statute, to the extent that he engages in the transportation of property in collection and delivery service or local cartage service by motor truck for compensation.

"Collection and delivery service" or "local cartage service" means all operations of a motor truck, except those between the terminals of a carrier or carriers, which are either: (1) within an area which includes any municipality or urban community and a zone extending twenty-five (25) air miles from the boundaries thereof; or (2) within and between contiguous municipalities; or (3) not more than twenty-five (25) miles in length.

"Collection" means the operation of a motor truck from any one point to any other point for the purpose of taking possession of property for transportation, and includes taking, or an offer or attempt to take, possession of such property.

"Delivery" means the operation of a motor truck from any one point to any other point for the purpose of relinquishing possession of property after transportation, and includes relinquishing, or an offer or attempt to relinquish, possession of such property.

"Special equipment" means any motor truck, the primary carrying capacity of which is occupied by mounted machinery.

"Rated load carrying ability" means the weight which the tires mounted on the load bearing wheels of a motor truck are capable of carrying as deter-

mined in the manner set forth in Appendix No. 1 of the order.

"Capacity load" means either: (1) the aggregate weight of the property which may be transported in a motor truck, determined by deducting the weight of said truck from its rated load carrying ability; or (2) the maximum quantity of property, by volume, which may be stowed by efficient methods and safely transported in the load bearing space of the truck, whichever quantity is the lesser in weight.

§ 501.30 COMMUNICATIONS. Unless otherwise directed, communications concerning this order should refer to "General Order ODT 6A," and should be addressed to the Division of Motor Transport, Office of Defense Transportation, Washington, D. C.

This order shall become effective June 28, 1943, and shall remain in full force and effect until the termination of the present war shall have been duly proclaimed, or until such earlier time as the Office of Defense Transportation by further order may designate.

General Order ODT 6, as amended, General Permit ODT 6-5, General Permit ODT 6-8, and General Permit ODT 6-9 are hereby revoked as of the effective date of this General Order ODT 6A.

Issued at Washington, D. C., this 25th day of June 1943.

JOSEPH B EASTMAN, Director.
Office of Defense Transportation.

Manpower Program to Be Formulated

In an effort to ease a shortage of automobile and truck mechanics that is steadily growing more serious throughout the nation, the automotive Maintenance Manpower Committee, in conference with officials of the ODT, has designated a sub-committee to formulate a comprehensive program to meet the manpower needs of the industry.

Principal function of the national sub-committee will be the drafting of a general plan of action for automotive maintenance groups in individual communities. The sub-committee will also collect and distribute to the local groups information on successful cooperative recruiting and placement and training plans and will suggest methods by which various governmental and private agencies can fit into the national as well as the local programs.

Guide to Hiring of Minors

Otto S. Beyer, Director of the Division of Transport Personnel, ODT, announced that a summary of State and Federal laws and regulations affecting the employment of young persons has been made available to the transportation industries.

In addition to setting forth State and Federal regulations as they apply to minors in transportation industries and related occupations, the summary includes a state by state digest of minimum ages for employment in occupations considered hazardous or possibly detrimental to young people. Also listed are maximum hours of work, night work prohibitions, required meal periods and minimum age requirements for motor vehicle operators.

Consolidation of Parcels Permitted

Small packages, banned from individual delivery service in the Northeastern states, may be delivered by a parcel delivery service if consolidated they make one package exceeding 5 lb. in weight and exceeding 60 in. of length and girth combined, ODT General Counsel, has ruled. This interpretation of ODT General Order 17 places specialty and independent stores which use a combined parcel service for delivery of their merchandise on an equal footing with larger department stores.



INVADERS TODAY... *Trucks Tomorrow*

With horsepower below and firepower above, Half-Tracks by Autocar lunge and plunge in war's fiery cauldron... piercing enemy positions on the ground... pounding planes from the sky.

They are powerful as bull elephants, yet nimble as polo ponies. For they are still Autocars... a preview of the power and performance you may expect in Autocar

Trucks when this global mess is cleaned up. In the meantime, let Autocar's Factory Branches help you keep your pledge to the U. S. Truck Conservation Corps.



AUTOCAR

MANUFACTURED IN ARDMORE, PA.
SERVICED BY FACTORY BRANCHES FROM COAST TO COAST

"For Excellence of Production"



Photograph Courtesy of Mack Trucks, Inc.

THIS BIG BRUTE HAS ONE TOO!



Our entire facilities have been turned over to the manufacture of heavy duty frames and other products necessary for the promotion of our national war effort.



The Army's prime movers must be able to take a terrific beating. They have to negotiate shell torn country and rough terrain as well as paved highways in order to place their pieces of ordnance where they will do the most good. That is the reason why many thousands of them are built on Parish Pressed Steel Heat-treated Frames—the frames with the "spring-back."

Parish Frames, because they are made of alloy and high carbon steel heat-treated, have a fatigue value 200% greater than steels commonly used. The steel in Parish Frames gives way less to stresses and strains and returns immediately they are removed. They will do this every time, and all parts attached to them will be held in true relation to one another.

That is why so many of the Army's Prime Movers are built on Parish Frames and is also the reason you should specify them for your trucks. Specify PARISH, the economical, low repair cost frames—the frames with the "spring back."

PARISH PRESSED STEEL COMPANY, Reading, Pa.

Subsidiary of SPICER MANUFACTURING CORPORATION

Western Representative: F. Somers Peterson, 57 California St., San Francisco, Cal.

PARISH

PRESSED STEEL HEAT-TREATED FRAMES FOR TRUCKS & TRAILERS

OPA NEWS

New Coupon Endorsement Procedure

As a further protection against misuse of gasoline ration coupons, all gasoline users, beginning July 22, must make necessary endorsements on all coupons as soon as any new ration books are issued to them, according to the OPA. Failure to write in the proper notation may result in loss of the ration, OPA warned.

As in the past, endorsements are to be written or stamped in ink, but hereafter the notations on most coupons will be on the face, instead of the back. In this connection OPA revealed that space will be provided on the face of most types of coupons for the necessary notations.

With the exception of "E" and "R" coupons, the information to be noted on gasoline coupons will remain the same as previously:

1. In the case of "A," "B," "C," "D," "T-1," or "T-2" books, the license number and the State of registration of the vehicle are to be written in the space provided, except that in the case of interchangeable coupon books issued for official or fleet vehicles, the information shall be the official or fleet designation (or the Certificates of War Necessity number in the case of commercial vehicles not operating under fleet designation), and the State and City, or Town in which the principal office of the fleet operator is located.

2. In the case of "E" and "R" books, the name and address, as it appears on the cover of the book, should be endorsed on the coupons. However, "E" and "R" books, unlike the others, need not be endorsed immediately, but may be endorsed at the time the gasoline is purchased. Where gasoline is purchased in bulk lots and is delivered to the premises of the "E" or "R" ration holder, no endorsement at all is required. Where delivery is made to the purchaser at a filling station, bulk station, or any place except the buyer's premises, the coupons must be endorsed.

Tire Mileage Ceiling Rates Set

Specific maximum prices have been announced by the OPA for the supply of tire mileage and servicing of rubber tires and tubes furnished to operators of buses and taxicabs under tire mileage contracts.

Rates are established, either per tire mile or per vehicle mile, in Maximum Price Regulation No. 414, Tire Mileage, effective July 2, 1943.

The action establishes a uniform ceiling for the industry in proper relation to the March, 1942, level of rates currently in effect, but permits adjustment of individual rates to level out abnormalities and to keep them adjusted to changing operating conditions. Returns to the manufacturers are roughly comparable to the prices at which tires are normally sold to commercial tire users. The regulation has no effect on individual consumers.

Rental Ceilings on Dump Trucks

Nationwide rental ceilings on dump trucks were established by the OPA in an action generally revising the price regulation dealing with construction equipment rental and service charges.

Major changes include adjustment of rental rates which experience showed were too high or too low, and inclusion of several new classes of equipment.

Licensed Gas Distributors Redefined

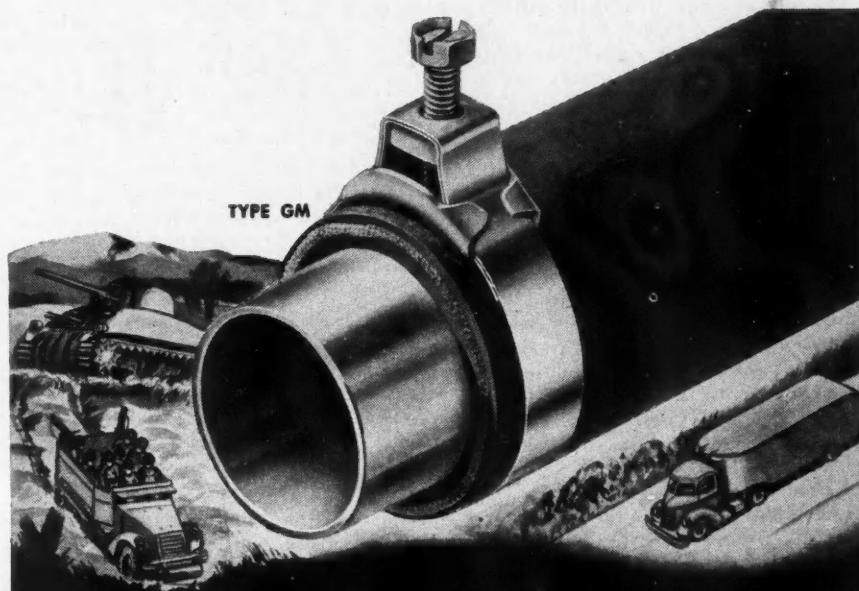
The OPA revised its definition of licensed distributors to exclude railroads,

bus and truck lines and others who buy gasoline solely for their own use.

This action will relieve these consumers from the clerical work involved in making reports required of licensed distributors.

Under the revised definition a licensed distributor is any person who must account directly to the motor fuel tax administration of a State for gasoline which he receives for sale within that State.

Persons now operating as licensed distributors who wish to operate exclusively as consumers shall apply to the OPA in Washington for permission to do so. After permission is granted they will surrender ration coupons in obtaining gasoline, in the same manner as any other consumer.



TYPE GM

DEPEND ON WITTEK

NOC-OUT

HOSE CLAMPS



Type A—Adjustable For Replacement.

The standard of the industry. Quick-tightening, perfect leak-proof hose connections, for original equipment and replacement. For Radiator, Heater, Booster Brakes and High Pressure hose connections. Wittek Manufacturing Co., 4305-15 W. 24th Place, Chicago, Ill.



Type HP—For High Pressure Requirements.

WITTEK  **NOC-OUT**
HOSE CLAMPS



CCJ NEWSCAST

Gas Situation Under Investigation as Supply in East Improves

On July 14 War Mobilization Director Byrnes announced that a thorough investigation of the domestic gasoline situation would be undertaken.

This statement came on the heels of several encouraging reports on improved transportation of petroleum products to the East. Deputy Petroleum Administrator Ralph K. Davies said that "incoming supplies of petroleum on the East Coast were now at levels equaling the peacetime normal volume" but that stocks were still below normal and "enormous military requirements" remained to be met.

The Petroleum Industry's War Council said that if transportation facilities continued to improve it should soon be possible to give East Coast drivers about as much gasoline as other parts of the country were receiving.

A pessimistic note was sounded by ODT Director Eastman, who, in the face of these optimistic reports, asked WPB to narrow the list of "preferred" commercial users of gasoline in the Northeastern shortage area or it might prove necessary to allot more gasoline for civilian consumption at the expense of military supplies.

The Byrnes investigation was undertaken at the request of OPA and in the light of "new developments." It was said that it might be weeks before the course of the investigation was decided upon.

Highway Traffic Hits Wartime Low

Traffic on rural roads in the East has decreased in the six months from December through May to less than half of pre-war normal, the Public Roads Administration of the Federal Works Agency reported in announcing the May records of 519 automatic traffic counters in 40 states.

Traffic in the West, rationed since December 1, 1942, has settled down to less than two-thirds of pre-war normal. In May it amounted to 61 per cent of that in May, 1941, in April 63 per cent, in March 63, in February 65, and in January 61.

Motor-fuel tax collections totaled more than 31 million dollars in 28 States in May and indicated that total urban and rural traffic in the East used about 52 per cent as much gasoline in April as in the same month in 1941. In the area rationed last Dec. 1, gasoline consumption in April was about 73 per cent of pre-war normal. For the entire country, April consumption amounted to about 64 per cent of pre-war normal.

May Truck Freight Volume 16.4 Per Cent Over 1942

The volume of freight transported by motor carriers in May decreased 3.5 per cent under April, but held 16.4 per cent over May, 1942, according to reports compiled and released by the American Trucking Association.

Comparable reports were received by ATA from 229 motor carriers in forty-one states. The reporting carriers transported an aggregate of 1,778,476 tons in May, as against 1,843,138 tons in April, and 1,528,273 tons in May, 1942.

The ATA index figure, computed on the basis of the average monthly tonnage of the reporting carriers for the three-year period of 1938-1940 as representing 100, was 180.86.

A little more than 86½ per cent of all tonnage transported in the month was hauled by carriers of general freight. The volume in this category showed a 4.6 per cent decrease under April, and an increase of 15 per cent over May of last year.

Transporters of petroleum products, accounting for almost 6 per cent of the total tonnage reported, increased 2.5 per cent over April and 66.1 per cent over May, 1942.

Haulers of iron and steel products reported slightly less than 3 per cent of the total tonnage. The volume of these commodities increased 5.9 per cent over April, and held 45.1 per cent over May of last year.

Approximately 4½ per cent of the total tonnage reported was miscellaneous commodities, including tobacco, milk, textile products, coke, bricks, building material, cement and household goods. Tonnage in this class increased 5.6 per cent over April, but dropped 8.7 per cent under May, 1942.

OPA Has Dealer Advisory Group

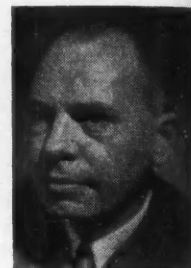
The appointment of 24 automobile and truck dealers to serve on a National Industry Advisory Committee for the Retail Motor Vehicle Trade was announced by the OPA.

The purpose of the group will be to advise OPA with respect to industry matters. Pricing problems under existing regulations for new passenger automobiles, and new and used motor vehicles will be studied.



Howard Jones, 47, Vice President in Charge of Production, White Motor Company, and one of the best known automotive production men in the country, died suddenly of a heart attack at his home in Euclid, Ohio. He was active, apparently in good health, and his passing came as a shock to his many friends and associates. He joined White Motor in 1924 and was advanced steadily through the ranks of production supervision.

Roy W. Paton, Perfect Circle Replacement Engineer, has been elected chairman of the Indiana section of the Society of Automotive Engineers for the year 1943-44.



J. M. Ball, sole owner of the Ball Motor Company, just appointed White truck and bus distributor in the Sacramento, Cal., area has been associated with White for 17 years.

Election of G. C. Hoyt, director of foreign sales, as vice president of the International Harvester Company in charge of foreign sales, was announced by Fowler McCormick, company president. Mr. Hoyt succeeds E. A. Brittenham, who retired July 1.



Allan L. Gintzel has been appointed district manager of the Mid-Western Territory for The Toledo Steel Products Co. His headquarters are in Kansas City.

A. C. Berg has been appointed manager of the Road Machinery Division of Gar Wood Industries, Inc., Detroit. Mr. Berg, who joined the Company in 1919, became Assistant Manager of the Road Machinery Division when it became a part of Gar Wood Industries, Inc., in 1934.



Heavy Duty Trucks on Alaskan Highway Equipped with *Midland Power Brakes*



One of 500 Thorntons
Four-Rear-Wheel Drive
Ford trucks used on
the Alaskan Highway.

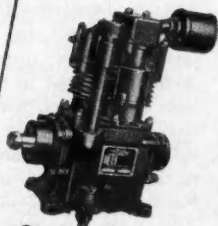
THE Alaska Military Highway is one of the great accomplishments in the American war effort. Tremendous obstacles were overcome in cutting this road through the Alaskan wilderness so speedily. Extraordinary service was required from tough, heavy duty trucks. And brakes had to be *sure*. 500 trucks like the one above were equipped with Midland Power Brakes for their super job in helping to build "America's Glory Road."

For greatest efficiency and safety in the operation of your trucks, contact the nearest Midland Distributor about the Midland Brake Surety Plan and Midland Power Brake Kits.

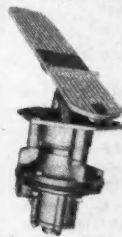
THE MIDLAND STEEL PRODUCTS COMPANY
Cleveland 1, Ohio

MIDLAND'S 3 EXCLUSIVE FEATURES

Provide Maximum Safety and Dependability



Big 7.3 cu. ft.
Compressor for
DOUBLE AIR
CAPACITY



Fully compensating
foot control valve for
PERFECT CONTROL



Cylinder or
Diaphragms for
SUPER POWER

MIDLAND

CHRISTENSEN

POWER BRAKES

CCJ NEWSCAST

(CONTINUED FROM PAGE 70)

All geographical sections of the country and all types of dealers are represented on the committee. The committee is composed of three small dealers (selling less than 100 automobiles a year), nine medium dealers (selling under 250 new automobiles) and 12 large dealers. The breakdown also shows that one new passenger car dealer from each OPA regional section has been named to the group as well as four dealers at large. Also serving are five truck dealers, three exclusive used car dealers, three exclusive used truck dealers and one exclusive trailer dealer.



L. W. Beck, Central Region Manager, Cummins Engine Co., Columbus, Ind., whose office has been moved to 8 S. Michigan Ave., Chicago



The U. S. Coast Guard is training Spars to become truck drivers in metropolitan areas to release men for duty in combat areas. Members of the first class, trained at the Brooklyn Coast Guard Garage are shown above with their leader and instructor, Chief Petty Officer Andrew McNaughton. The two weeks' course included greasing, gassing, disassembling, assembling, checking, and general maintenance jobs



The Gould Storage Battery Corporation has announced that John C. Sykora, left, has been appointed to a vice presidency and Roy J. Stanton to Motive Power Sales Manager. Mr. Sykora has been with the Gould organization for nearly a quarter of a century. Roy J. Stanton, formerly employed by U.S.L., became a member of the Gould Sales force when Gould took over the industrial division of U.S.L.



This heavy-duty M-1 wrecker, built by Kenworth for the U. S. Army, is a traveling machine shop and a mobile trouble shooter. It is equipped with everything from a midge wrench to welding apparatus. To be sure that each wrecker is ready for the toughest going at the battle-fronts, Kenworth puts every truck through a series of rigorous tests on the company-leased proving grounds before delivery



At the post graduate Mack Training Schools in New Brunswick, N. J., and Allentown, Pa., now nearing the completion of their second year, Field Artillery commissioned and non commissioned officers are instructed by Mack field men and engineers in assembly and disassembly of the 7½ ton Mack prime mover



Another wartime heavy duty hauling job. This 60-ton navy landing barge is shown rolling over the streets of Oakland, Cal. General Tires handled the load without mishap



The Gould Commercial Division of the National Battery Company was awarded the coveted Army-Navy "E" pennant at a ceremony held in Depew, N. Y. Captain Joseph S. Evans, U. S. N., presented the "E" pennant, and A. H. Daggett accepted on behalf of National Battery



This big Fruehauf trailer used to carry new automobiles. Today it transports lifeboats to southern shipyards. Each boat 24 ft. long and fully equipped

A Gage for Matching Dual Tires

Pennsylvania Rubber Co., Jeannette, Pa., has announced to its dealers a new instrument to be used in the matching of dual truck tires.

"We have all been talking for years," say Pennsylvania officials, "about the necessity of properly matching dual truck tires and the improvement in truck tire mileage resulting from the proper handling of this problem. Unfortunately, very few companies have tried to do anything about it. With our Match-Your-Duals Gauge we are giving our dealers a simple, inexpensive, easy-to-use instrument which will accomplish the desired result."

The Match - Your - Duals Gauge is a wood caliper with a direct reading scale graduated in 1/8 inches, by which diameter readings of both inside and outside duals can be taken easily and quickly while the tires are on the vehicle under full load and inflation.

Along with the Match-Your-Duals Gauge,



Pennsylvania provides a series of record forms which should be of value to truck operators in handling the dual matching problem.

The instrument was developed by C. E. Hannum, Pennsylvania's assistant sales manager.

It's wasteful at any time . . . but in wartime

IT'S TRAGIC TO LET A MOTOR TRUCK WORK WITHOUT A TRAILER!

Consider these simple facts:

- Despite our war successes, our production must be still greater.
- Transportation, an indispensable part of production, must likewise do a still bigger war job. Every freight-carrying vehicle must do every ounce of work we can squeeze out of it.
- Thousands of existing motor trucks could easily do two to four times as much work as they are now doing. Moreover, they could do it with no additional drivers . . . with relatively little more gasoline . . . and with savings (in relation to the cargo hauled) of 15 per cent in tires and 25 per cent in amount of steel used in the vehicles.

Trailers are the answer!

Any motor truck, pulling a Trailer, can haul two to four times as much as it is designed to carry. Conversion of a truck into a "tractor" is very simple.

True enough, Trailers are not adaptable to all jobs now handled by trucks, but they can handle a big majority of them and do them more efficiently, meanwhile conserving precious steel for war needs.

For vivid evidence of Trailer performance, turn to the motor freight operators, whose very exist-

ence depends on getting the most out of their equipment. A survey of 241 operators showed that over 87 per cent of their equipment used in intercity haulage is Tractor-Trailers.

And more evidence: Every economic slump since the advent of Trailers has seen a major boom in their sale and usage . . . because people learned that they could haul more goods with less equipment. While we're in no economic slump now, the need for hauling more with a minimum of equipment is greater than ever.

Yes, it's tragic to let motor trucks—those already in use or authorized new ones—work without Trailers.

But . . .

Where are the Trailers? Virtually none for non-military use has been built in the past eighteen months. The meager stockpile then on hand has been depleted. Many old Trailers have worn out beyond repair. The total supply has shrunk dangerously.

Can the rubber and steel for more Trailers be spared? Well, the rubber can, thanks to Mr. Jeffers. And the relatively insignificant amount of steel certainly can in view of the **multiplied hauling capacity** it will produce.

Can the Trailers be produced?

Yes, although the Trailer manufacturers of our country are concentrating on war orders, they can build sufficient civilian Trailers without slighting their military production.

Possibly the failure to permit the building of desperately needed Trailers comes from a tendency to look at the Trailer business as an individual industry. But this is a critical misconception. The production of Trailers is actually an integral element of every kind of business . . . of every single company . . . that must haul its materials or products over our roads.

The sooner authority is given for the building of sufficient Trailers, the quicker will a big part of the war transportation problem be settled, because . . .

Trailers are the answer!

"Conservation" is today's battle-cry — conservation of manpower, productive energy, materials, equipment.

"Conservation" is the very keynote of the Trailer Idea!

Every time a Trailer is coupled to a motor truck, the truck's haulage capacity is at least doubled—and this increased load is hauled with no more manpower and with very little extra fuel.

Further, in "shuttle" operations, the motor truck and driver are never idle—they keep on working while the Trailers are being loaded and unloaded.

Actually, "conservation" is the foundation for the tremendous growth of the Trailer Industry.

With No Trailers, War Operations Like These Are Hamstrung

Kaiser uses Trailers to haul Liberty Ship boilers from the plant to the testing grounds and then to the shipways. No other method is remotely practical.

Parkway Transfer, of Elgin, Illinois, regularly hauls sixteen steers or ninety hogs to market by Trailer. The same cargo would require two or three trucks . . . or two or three time and money-wasting trips. Scores of thousands of farmers depend on Trailers to carry their livestock and crops to market.

Kearney & Trecker, largest manufacturers of milling machines, use three Trailers and one truck in a "shuttle" operation enabling them to meet a critical production schedule.

U. S. Engineers are building a huge dam near the head of the Cumberland River. Trailers carry cement 40 miles from the nearest rail siding. Regular trucks would be wasteful and inefficient.

Gray Marine Motor, building Diesels for landing boats, "shuttles" with three Trailers and one "tractor" in work that would need at least three trucks. Manpower, rubber, gasoline, steel are conserved.

National Lead uses Trailers to haul ilmenite ore, the source of titanium, from mines to the nearest railroad, 30 miles away. Titanium is a "must" for paint for ships, planes, tanks, and a host of everyday necessities. These mines are now virtually our only source of ilmenite.

FRUEHAUF TRAILER COMPANY - DETROIT

CCJ QUIZ



by ROBERT F. BAHL

Correct Answers on Page 76

Believing in the old maxim of "A little nonsense now and then is relished by the wisest men," the CCJ Quiz gets off the serious side this month and poses a few questions in the lighter vein. Take a credit of 10 points for each one you answer correctly, and see how much of a "wise man" you are. A 100 score gives you the right to tell old King Solomon to move over. Answers are on page 76. Fair warning:—Watch out for trick questions.

1.

A truck-driver ran out of gas while traveling through the Ozarks. Fortunately, he was just in front of a General Store. Now, the driver had with him only one T coupon worth 5 gallons. The storekeeper had half a drum of gasoline, but he had only two measures, a 7-gal. measure and a 3-gal. measure. How did he mete out exactly 5 gal. using only these two measures?

2.

What is the smallest number of trucks that could be on a highway in this order: Two trucks in front of a truck, two trucks behind a truck, and a truck between two trucks?

3.

Here's one for the weighmaster. Which is the heavier load, a ton of gold or a ton of feathers?

4.

On a slippery day last winter, a 1929 model truck was trying to negotiate a steep hill. The hill was 50 yd. long. The truck would lunge forward 10 yd., but it had no chains and would slide back 5 yd. before it got traction to lunge forward again. If each time it lunged, it went forward 10 yd. and each time it slipped it went back 5 yd., how many times would it have to lunge forward in order to reach the top of the hill?

5.

Suppose a trip between New York and Philadelphia takes $4\frac{1}{2}$ hrs. and vice versa. The XYZ Trucking Co., operating between the two cities, has a truck leaving Philadelphia every hour. You are a truck driver leaving New York for Philadelphia. How many of the XYZ trucks will you pass on the way?

6.

If a truck and a half can haul a ton and a half a mile and a half in an hour and a half, how long would it take three trucks to haul three tons three miles?

7.

Two trucks, a G.M.C. and a Mack, 60 miles apart, are traveling toward each other on the Pennsylvania Turnpike. The G.M.C. is going at a rate of 35 miles per hour and the Mack at 25 miles per hour. A fly lands on the nose of the G.M.C. driver and then travels at a rate of 45 miles per hour back and forth between the two trucks until they meet. How many miles has the fly flown by the time the trucks meet?

8.

Which would you have to pay the larger income tax on . . . a truck load of nickels or half a truck load of dimes?

9.

Sunshine Brown, colored, age 64, was porter and nightwatchman at the garage of Jones Transit Company, general haulers of everything from peanuts to dynamite. One morning, the 22nd of June to be exact, as old man Jones entered the old grey stone building, Sunshine rushed to him all in agitation.

"Boss! Boss! You know dat load of ammunition yo' is to haul fo' de gov'ment today . . ."

"Yes! Yes!" replied Jones.

"Ah wouldn't do it! Ah wouldn't do it!" cried Sunshine shaking his head.

"Why?"

"Last night ah had a dream, Boss, and mah dreams always done come true. Ah dreamt that yo' was drivin' dat ol' bus ovah de East Bridge and a couple of fifth col-yum-nists comes along and done blows up de whole thing into tiny smithereens."

Jones then told Sunshine to see the cashier. He was fired.

Why did Jones fire him?

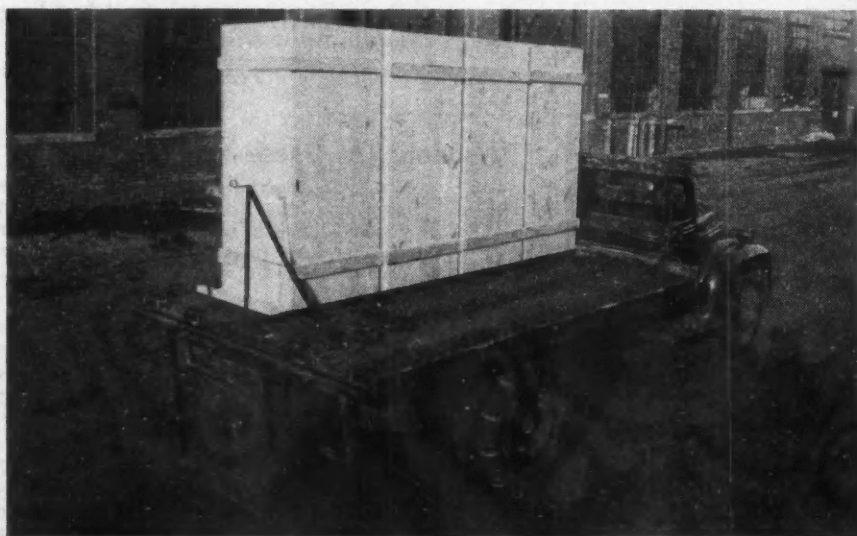
10.

This last question is divided into 10 parts. You get a credit of one point for each of the following that you can locate on a truck . . .

- a. a unit of the Army
- b. the chief executive of a state
- c. a famous British battleship
- d. a scarf
- e. a season of the year
- f. a musical instrument
- g. Sally Rand's wardrobe
- h. a punctuation mark
- i. a city square
- j. an athletic piece of wood.

George W. Daniels Dies

George W. Daniels, executive vice-president of the trucking firm of Daniels & Kennedy, Inc., New York, N. Y., and one of the leaders of the trucking industry in the East, who had been engaged in the transportation of freight in New York for fifty years, died at his home in Brooklyn, N. Y., after an intermittent illness of six months of heart disease. He was 75 years old.



A roller platform for loading materials on trucks devised by E. J. Kidder of General Electric's Schenectady Works has reduced the time and number of trips needed to move materials. The platform consists of five rows of old $2\frac{1}{4}$ x 6-in. conveyor rollers which were to have been scrapped. It was widened 9 in. to 8 ft., permitting the roller bed to accommodate six pallets, instead of three on the original platform. In unloading, they are shifted by hand on the rollers and taken off the end of the platform by fork truck. A hydraulic jack arrangement is used to raise strips run lengthwise between the rows of rollers to prevent movement of the load en route.



**Another Fleet of
Locomotive-Sized Federals**

GOES ON THE WAR PATH TO VICTORY



★ The operation pictured above is somewhere in the Canadian Northwest, where airfields, coast artillery, gun emplacements and military roads have become vital in the defense of America. These works—now completed—or being rushed to completion—are important to our protective strategy. They serve to illustrate how hundreds of fleets of husky Federal Trucks have been doing legion work, aiding in the all important job of protecting the Arsenals of Democracy from land, air or sea invasion—hastening the day of Victory.

Many months before Pearl Harbor, Federal Trucks were in wide use with our own and the United Nations' Armed Forces. Today Federal Trucks are operating in the combat and defensive areas of the Middle East, Alaska, the Canal Zone, India, Russia, China, Britain, Canada, Australia and the U. S. A.

Hundreds of uses, in thousands of jobs, as armored tank haulers, giant aircraft rescue trucks, road builders, airfield construction units, fire fighters and heavy transport carriers, are proving over and over again how Federal's "all-truck", balanced design is recognized for long-lived dependability and consistent, top flight performance. That's why those in important positions on both our work fronts and war fronts demand Federal's huskier, heavy duty reliability. They're tossing the tough jobs to Federal because they know they'll deliver!

FEDERAL MOTOR TRUCK COMPANY, DETROIT, MICHIGAN



The Army and Navy "E" was awarded to Federal—"For Excellence in War Production"—building thousands of heavy duty trucks for our Armed Forces.

FEDERAL TRUCKS

Since 1910...Known in Every Country—Sold on Every Continent

QUIZ ANSWERS

CCJ Quiz on Page 74

1. Here's how the storekeeper measured exactly 5 gal.: 1. Fill the 7-gal. measure from the drum. 2. Fill the 3-gal. measure from the 7-gal. measure, leaving 4 gal. in the 7-gal. measure. 3. Empty the 3-gal. measure into the drum. 4. Again fill the 3-gal. measure from the 7-gal. measure, this time leaving 1 gal. in the 7-gal. measure. 5. Empty the 3-gal. measure into the drum. 6. Pour the 1 gal. that is in the 7-gal. measure into the 3-gal. measure. 7.

Fill the 7-gal. measure from the drum. 8. Now fill the 3-gal. measure, which already contains 1 gal. from the 7-gal. measure, leaving exactly 5 gal. in the 7-gal. measure.

2. Three . . . one right after the other. Trucks 1 and 2 are in front of truck 3; trucks 2 and 3 are behind truck 1; and truck 2 is between trucks 1 and 3.

3. They both weigh the same. Although a pound of feathers is heavier than a pound of gold, owing to the difference between avoirdupois weight and troy weight, it has no effect on tonnage, since there is no ton in the troy scale. A ton is still a ton, whether it's Ft. Knox or a pillow factory.

4. Nine times. After eight lunges and eight relapses, the truck has gone up 40

ft. On the ninth lunge, the truck has reached the top.

5. Nine. The Philadelphia bound truck will meet a New York bound truck every half hour.

6. Three hours . . . and it isn't the same answer that you get from the old "chicken and a half" problem.

7. 45 miles. The trucks meet in one hour, the G.M.C. having covered 35 miles and the Mack 25. The fly therefore must have been traveling one hour also, and would have gone 45 miles.

8. The dimes, of course. They're smaller and they're worth twice as much.

9. Ignoring all the irrelevant details, you'll discover that Sunshine was fired because he was the nightwatchman. If he had a dream the night before he obviously must have been sleeping on the job.

10. a. a unit of the Army . . . battery.
b. the chief executive of a state . . . governor.

c. a famous British battleship . . . Hood (H.M.S. Hood).

d. a scarf . . . muffler.

e. a season of the year . . . spring.

f. a musical instrument . . . drum, or horn.

g. Sally Rand's wardrobe . . . fan.

h. a punctuation mark . . . dash.

i. a city square . . . block (cylinder block).

j. an athletic piece of wood . . . running board.

Wilson Appointed Whiz West Coast Field Manager

L. M. Olson, general sales manager, R. M. Hollingshead Corporation, Camden, N. J., has announced the appointment of Lester M. Wilson as West Coast field manager to head all phases of the WHIZ Automotive Products Division and the WHIZ Aviation Products Division on the Pacific Coast. He will make his headquarters in Los Angeles.

William W. Wanamaker has been appointed district representative of WHIZ automotive maintenance products and lubricants, specializing in the promotion of WHIZ Motor Rhythm.



The Yellow Transit Co., whose motor freight routes fan out of Oklahoma City to cover the Southwest and Central states, proudly points out that this sextet of veteran Mack tractors hauling semi-trailers have traveled close to 7,000,000 miles during the past 10 yr. on the company's long-distance runs. A few years ago when they were nearing the million-mile mark they were taken off long-distance work and put on local runs, but the increased demands of wartime brought them back into long distance, 24-hour-a-day hauling once more

HANSEN-EQUIP YOUR FLEETS

FOR BETTER TRUCK PERFORMANCE

LASTING, in most instances, longer than the body on which installed, HANSEN Body Hardware has built a 23-year reputation for durable, dependable service—seldom if ever requiring repairs, replacement or attention.

Such long, reliable service is due to the extra ruggedness and extremely simple design for which HANSEN Hardware is noted. Made especially for heavy-duty use in commercial body service. The majority of custom-built tanks, trucks and trailers are Hansen-equipped—definite proof of preference based on performance.

Makers and users of motorized transportation for making deliveries of essentials can cut their repair and upkeep expense—increase load capacity—improve appearance and operation—with HANSEN. Built for service—it gives it!

ASK FOR CATALOG, if you don't already have one, showing the complete Hansen Line of Hardware and Tackers.

A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE., CHICAGO, ILL.

The
Hard-
ware

for
Hard
Wear

**HARDWARE for
Commercial Bodies**

*Makers of Better
Hardware for
Twenty-Three Years*



KEEP YOUR HORSE-POWER AND OUR ARMY'S FIRE-POWER ON THE JOB!



**AN INDIVIDUALLY ENGINEERED SET FOR
EACH POPULAR MAKE OF CAR OR TRUCK**

Scrap metal is needed for every gun,
tank and ship. Send your scrap to war.

Engines much like those in your own truck and bus fleet, by hundreds of thousands, give swift mobility to American Fire-Power. By millions, Sealed Power Piston Rings, Pistons and Cylinder Sleeves safeguard the vital horse-power of those engines in tanks and trucks and jeeps and aircraft and boats and ships.

Your horsepower is just as vitally necessary to the home front—and to the war—and it deserves the same sure power-protecting service parts. That is why the manufacture of Sealed Power Piston Rings, in sets specifically engineered for your

make and model of engine, is still part of our wartime duty, despite the heavy military demands on our facilities.

These are no times to make an overburdened service mechanic worry and guess at what particular ring combination to use in a given engine—it's not fair to him and it's not good business. There's sound automotive engineering experience back of every Sealed Power Ring Set specification. Take advantage of it and you're guarding your horsepower, your rationed fuel and your engine's life.

SEALED POWER CORPORATION

Muskegon, Michigan • Windsor, Ontario

*Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves,
Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts*

SEALED POWER PISTON RING SETS INDIVIDUALLY ENGINEERED

WOMEN ARE GEMS IN JEWEL FLEET

(CONTINUED FROM PAGE 39)

driver. However, the most desirable personal qualifications in applicants for women drivers are still experimental. A branch manager in need of some women sales drivers naturally wishes to give first consideration to the promise of sales ability as well as fundamental knowledge of operating a car safely. To check on

driving abilities, the company has been developing practicable testing standards. Since a woman who comes as an applicant presumably has the qualifications to sell and drive, she may be driving an automobile to the place of the interview. This often will afford a branch manager or one of his assistant managers an opportunity for making a preliminary estimate of her driving habits by making an inspection of her personal car, watchful for evidence of accident damage and care or carelessness in

its maintenance and general appearance.

If the applicant's references are favorable she will be asked to take a physical examination. The company has made efforts to standardize this procedure, that is, we have developed a careful outline of the physical requirements of the job and have worked with physicians in an attempt to set up a list of limiting physical and health standards for women drivers. However, this program hasn't made much progress. A general answer by medical examiners is that the essential "physical qualifications" for a woman to safely handle a Jewel sales driving job will depend in each particular case, "on the woman." This result naturally has caused the company to place special emphasis on the importance of an initial very thorough physical examination before a woman driver is employed.

Company experience to date has indicated that "first impressions" and "general appearance" are not reliable guides in the employment of women drivers. The one company rule that seems most needed is that the woman driver must not be "too young." This means that she must have achieved the age maturity which normally is associated with character and working reliability. Thus, few of our women drivers are under 25 years and "30 to 40" is the general rule, with an average age of 33 years. We express no preference as to whether a new woman driver should be unmarried or married; and a large percentage of them is married. If married, it is essential that she have no small children or other home dependencies that would interfere with working regularly. It also seems essential that her husband be favorable to such work. As a test of these and other home environment factors, it is customary that one of the usual three preliminary interviews by a branch manager or his assistant with a woman applicant shall be in her home.

Another seeming essential qualification for a successful woman driver, besides good health and favorable home responsibility, is a real financial incentive; that is, a real need for the weekly earnings from the job. It may be helpful also for a woman to have had previous sales experience somewhat similar to our own line of



Chicago APEX WORLD'S FINEST FOOT POWER RIVETING MACHINE

Relines brakes—refaces clutches with original factory accuracy. Handles any size job from the smallest to the largest—passenger car, truck, bus, army and airplane brakes using tubular rivets. Truck fleet operators find that this heavy, powerful relining machine does the job better, quicker and with less effort. Delining, drilling, countersinking, riveting, straightening and grinding is accomplished without the operator leaving the machine. Actually, it's a complete relining-refacing department. Every known labor saving feature is incorporated in its design. Write for catalog of the complete "Chicago" line.

TESTED AND APPROVED FOR
U. S. ARMY AND NAVY USE
QUICK DELIVERY!

CHECK THIS LIST OF FINER FEATURES

★ **SET BACK DELINER**... Full vision clearance. Motionless, adjustable knockout punch. Built-in old rivet collector.

★ **DEEP THROAT**... For easy working.

★ **ADJUSTABLE ANVIL**... Quickly set for any length rivet.

★ **LOW HEAD**... Specially designed to facilitate work even on small diameter bands.

★ **SHOE STRAIGHTENERS**... Built in

★ **DRILLING UNIT**... Two-speed, V-belt drive, no hand pressure required, foot operated.

★ **GRINDING UNIT**... Fully machined, large table, 6 1/4" cushioned abrasive drum.

★ **CAPACITY**... Up to 1/4" diameter tubular or solid rivets.

★ **POWERFUL**... New toggle lever design.

★ **QUIET**... No noisy clatter.

Chicago Rivet

AND MACHINE CO.

9610 W. JACKSON BLVD., BELLWOOD, ILL.

(Chicago Suburb)

work. In general, also, it is essential that the "Jewel type" be a friendly and courteous person with a pleasing personality and good character.

We usually avoid the so-called "glamour type" of applicant; but it happens that a number of our successful women drivers could easily do credit to a local "beauty contest." Naturally, we want women drivers with the appearance and proof of easy-moving physical vitality, the type that normally wants to wear appropriately-styled "slacks" at her variety job. However, several of our most successful women drivers are of the more rounded type, who seemingly prefer not to wear slacks; and, in contrast, we also have other successful saleswomen of the under-100-lb. type.

The testing and training of our women driver applicants is guided by a single sheet "Driving Test" form which we have been using for several years. There are three different sections of questions. The first section pertains to a "preliminary" driving test. It is to assure us that the applicant "can operate an automobile with some degree of safety"; and this is to be determined "as soon as possible after applicant is definitely considered."

The second section pertains to "Final Driving Test Only," assuming an in-between training period for the former applicant who, by this time, probably has become an employee. The purpose of the final driving test, as stated in the form, is "to measure the employee's ability to operate a Jewel sedan delivery truck and to bring out those driving faults which must be corrected to make him or her a considerate driver—a Jewel driver that does not take chances. This is to be completed, using the route car, before the employee is assigned to a route and not later than two weeks after he is on the payroll."

The third group of questions are "To Be Answered By Person Giving The Test." They are:

1. Did you demonstrate to the operator why a Jewel car *should not be*: (a) parked diagonally? (b) parked in customer's driveway? (c) backed unless absolutely necessary?

2. Did you cover this test sheet with the operator—pointing out which factors need attention?

(TURN TO PAGE 80, PLEASE)

Clean'em *FAST*--for Dependable Inspection and Maintenance!



You can be sure of coming to a quick, sure decision as to the maintenance work that has to be done on a motor if it is **CLEAN** when you inspect it. And, the repair job will be a better one if done on a motor that is clean.

MAGNUSOL

gives you a fast, thorough cleaning job. Just spray it on, let it soak a few minutes — then flush off with water. You get a really clean job, without danger of damage to metal, rubber or insulation. No fire hazard . . . no harm to skin . . . no unpleasant after odors.

Clean motors *fast* and *safe* the Magnusol Way.

Get your copy of the "Fleet Operators Cleaning Handbook" describing cleaning methods and material to help you meet the maintenance load of war.

MAGNUS CHEMICAL COMPANY
36 SOUTH AVENUE GARWOOD, N. J.

Service Representatives in Principal Cities

Magnus FLEET CLEANING MATERIALS

The Fleet Operator's Answer to WAR-TIME SHORTAGES



Do These 3 Vital Jobs Faster

Fitting right in with your stepped-up wartime schedules are specialized Oakite materials and methods that speed **MAINTENANCE**, repair and overhaul on such vital jobs as:

1. Cleaning cooling systems
2. Degreasing repair parts
3. Cleaning motors and chassis

You will find recommended Oakite solutions, applied as directed, completely remove oil, grease, grime, dirt and other accumulations. Surfaces are left unharmed . . . equipment is quickly put back in service. **FREE** 36-page booklet gives details. Write for **YOUR** copy today!

OAKITE PRODUCTS, INC.
26D Thames St., New York 6, N.Y.

Technical Service Representatives Located in All
Principal Cities of the United States and Canada

OAKITE
DEGREASING
—speeds—
FLEET MAINTENANCE

WOMEN ARE GEMS IN JEWEL FLEET

(CONTINUED FROM PAGE 79)

3. Does employee have physical handicap that may interfere with the safe handling of the company car?

It is our plan to supplement this "Driving Test" form with another type of "Auto Drivers' Paper Test," to be taken by all prospective new driver salespeople. My assistant,

W. A. McGaw, has recently been giving much attention to the development of this new test.

Another driving test with which we are experimenting and which should be especially helpful in testing and training women drivers, is a new "Location Test." It would include such simple procedures as backing and parking a car, following a line, stopping at a specified mark. These tests would be planned especially to aid in correcting some of the most common faults of our women

drivers, as indicated by the company 1942 accident records.

Records show that our women drivers had, on a comparative basis, about 10 per cent more accidents during 1942 than our men drivers, and possibly because of, as previously stated, their lesser driving experience. They also show that the three types of accidents which were most common for both the men and women drivers, and which caused 53 per cent of all our 1942 accidents, were from "backing," "entering or leaving garages," and "at intersections." Other accident types, in order of their importance, were from "pulling away from curb," "inattention," "parking or improper parking," "skidding," and "turning." The least common types were "too fast for conditions," "passing," "unreported accident damage," "drove off highway to avoid other party," "pedestrian" and "unauthorized use."

The details on all accidents by women drivers are brought out fully, of course, in the company accident report forms. One special feature of these forms is three diagrams to show the situation "before" the accident, "at" the accident, and also "after" the accident. We have found that showing the condition "after" the accident has been helpful to us in getting more accurate accident descriptions.

A chief problem in the safety training of women drivers, as shown by our accident experience, is to stimulate them to be more attentive when starting their cars forward or backward, and when entering and leaving a garage. Their one biggest fault has been carelessness in backing. The problem is well illustrated by the following quotations from typical accident reports in which the woman driver was asked to tell "just how the accident occurred":

"Was backing out of alley—saw the car parked there but misjudged distance and just backed into it."

"I was responsible (for backing accident)—I did not apply the brake soon enough."

"I was backing on driveway from storeroom and cut in too much to the left, hitting the house sideways catching the door of the truck, which I had open, before I could apply the brakes. . . . After

(TURN TO PAGE 82, PLEASE)

Before "PEARL HARBOR" AND After "TOKYO"



CURTIS was actively engaged in *Defense Work* before "Pearl Harbor." Thereafter, a constantly increasing volume of *War Activities* was taken on until we are now devoting all of our productive efforts to War Work for our Government and essential War Industries. We expect to continue on this basis until America dictates the peace terms in Tokyo.

In World War I our engineering and designing ability and experience was recognized by the award to us of a contract for the manufacture of approximately two million (2,000,000) high explosive shell forgings. Our performance on this contract won for CURTIS the coveted Ordnance Department Flag, the emblem for "excellence," which flag is one of our treasured possessions.

Now in World War II our engineering ability and production facilities are again being called upon, first to design, then to produce some special equipment for one of the branches of the Armed Forces of the United States. This has progressed to the point where we are now tooling up, ordering in the material, and this *additional* productive activity is becoming an accomplished fact.

Today's emergency is providing an even richer experience to add to that already accumulated in the 89 years during which CURTIS has been a successful and growing institution, and which will naturally be reflected in the products of the CURTIS organization after the war is won and when peace-time markets are again restored.

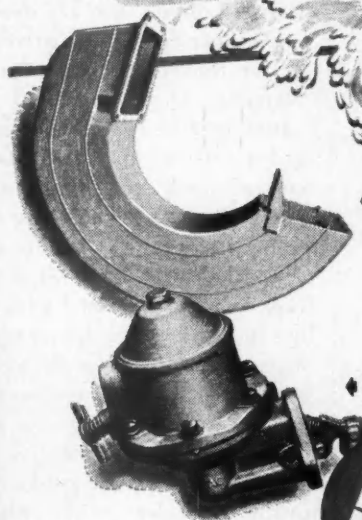
We will be glad to advise the restrictions and conditions applying to the sale of air compressors, car washers or lifts, and repairs therefor, if you will get in touch with us.



CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company

1970 Kienlen Avenue • St. Louis, Missouri



INTAKE SILENCER FOR NAVY DIESEL ENGINES—built by AC since 1934.

AUTOMOTIVE FUEL PUMP—built by AC since 1927.



SEA-GOING diesel engines breathe with a constant roar. Transmitted through the intake system, this racket would be hard on engine-room crews. So, many of the diesels of our Navy are hushed by special AC intake silencers.

No adjustments are possible in the finished silencers. They must be *right* when they leave the AC production line. So, accurate, painstaking workmanship is demanded in their production.

In spite of all this, Navy thoroughness requires regular checks on silencers—to keep them up to standard.


Your Fuel Pump, too, Needs Attention

The fuel pump on your car, truck, or tractor is blood brother to this silencer in its need for occasional care. Because it is precision


built, it, too, gives trouble very seldom. But, its life can be definitely prolonged—and your transportation protected—if you will have your service man check your pump after thirty thousand miles of use.


Automotive repair shops can give Conservation Service, not only on fuel pumps but on all nine AC products. (The details of this service, and of why you need it, are given briefly below.) To conserve badly needed materials, gasoline, oil, and tires, use this service—faithfully.


When replacement becomes necessary, select AC—for complete satisfaction.

 Awarded to the men and women of AC on September 2, 1942, for outstanding achievement in producing for Victory.


AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION


 **SPARK PLUGS**—Dirty or worn plugs waste as much gas as one coupon in ten. Oxide coating collects on the plugs and causes them to misfire, especially when the engine is working hard. Dirty plugs also cause hard starting, which weakens your battery. Under present, slow driving conditions, have your plugs cleaned and adjusted every few months.

 **AIR CLEANERS**—A dirty air cleaner increases gasoline consumption because it chokes down the flow of air into the carburetor. Your air cleaner should be rinsed whenever your car is lubricated.

 **FUEL PUMPS**—Practically trouble-free. But, if yours has been in use thirty or forty thousand miles, it

may be worn to the point where a check-up is due.

 **DRIVING INSTRUMENTS**—Speedometer, gasoline gauge, oil pressure gauge, ammeter, and temperature gauge seldom need service. But, if they give trouble, have them cared for at once.

 **OIL FILTERS**—Slow driving accelerates formation of soot and carbon in engine oil. If not constantly filtered from the oil, this dirt will clog piston rings, cause increased consumption of oil and gas. So, replace your oil filter element whenever your dealer's AC Oil Test Pad shows that your oil is dirty.

BRING VICTORY QUICKER—BUY U. S. WAR SAVINGS STAMPS AND BONDS

Reproduction of current advertisement appearing in leading national and farm publications.

It's smart business—and good Americanism, too—to service, adjust, and repair your AC products until they are worn out. That kind of conservation cuts your costs; conserves gasoline, oil, diesel fuel, and tires; and keeps your equipment on the move. When conservation is no longer possible, the inbuilt quality of AC products—in the thick of the fighting on every front, and long proved here at home—assures you of complete satisfaction. So, replace with AC.

WOMEN ARE GEMS IN JEWEL FLEET

(CONTINUED FROM PAGE 80)

the accident—I pulled ahead and backed out o.k.”

“I was parked and tried to back and the other car was parked too close.”

It is the responsibility of a branch manager or assistant branch manager to provide proper training for a new woman driver-applicant found weak

in certain driving practices; and also to provide corrective training for his older drivers found to have developed hazardous driving habits. He also gives or supervises the training of each driver in the proper maintenance of her car. This includes her personal inspection of her car every morning, which car usually is kept either in her garage or in one conveniently near her home. She also is instructed to report to the central garage responsible for the essential maintenance work on her car, any

operating faults that may need correcting.

The company has issued a number of special instruction bulletins and posters for women drivers. One of these, for example, tells “All Salesladies” that “We didn’t hire you for your muscles—your pay check is determined by your sales ability, not by how much you can lift.” The circular gives practical instruction on what to lift and how to lift it, and suggestions on so dividing packages (such as a case of coffee) that no weight above 20 to 25 lb. need be lifted.

The company also gives special attention to safety contests, in which the different company sales districts compete through the “Jewel Legion of Safety” for annual district safety awards. To promote safety interest the company issues many safety posters, and posters of the National Safety Council also are used.

Another feature of driver training is our Booster Clubs, active in many districts. The women and men have equal membership importance. The group elects its own officers, discusses work problems, and it is planned that each meeting shall give some attention to driving problems.

In the total, the Jewel Tea Co., Inc., is highly pleased with the manner in which our hundreds of new women sales drivers in all parts of the United States have responded to enable our company to meet the present war-time emergency in the supply of needed personnel. The gratifying sales results which these new women drivers have achieved and promise to continue to achieve, and their improving driving abilities, prove that they are well adapted to such work.

END

(Please resume your reading on P. 40)

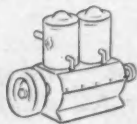


FOR WARTIME ECONOMY YOU CAN BANK ON BURD

What transport vehicles need now is more than flashing performance for a few thousand miles. They need the extra endurance that is engineered into Burd Piston Rings from a generation of experience in building rings for heavy-duty service . . . rings that keep fuel and oil consumption down in oilfield engines, tractors, in the steady service of planes, trucks, buses and compressors. Only with Burd can you furnish “Graf-Flox” . . . not a surface treatment but very substance of the metal . . . not only sudden seating and safety from scuffing, but resistance to wear . . . not only for the ring itself but for the cylinder walls and piston grooves. Burd Piston Ring Co., Rockford, Illinois.



BURD
“Graf-Flox”
PISTON RINGS



FREE HANDY RECORD BOOK

New, vest-pocket size book meets new need for economy records, truck trips and costs. Handy flap keeps ration cards safe and clean. Ask for copies for your fleet and friends.

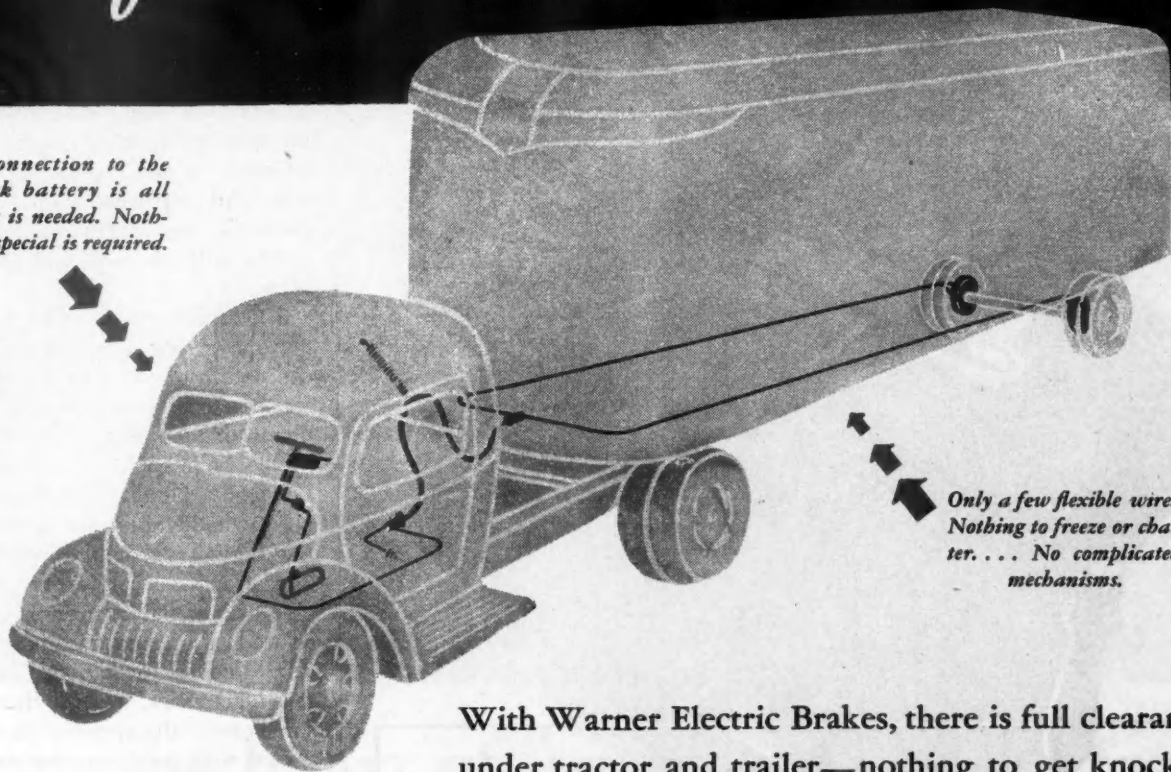
Trailers Serve as Mobile Shops

Mobile airplane instrument repair units manufactured by the Keystone Trailer and Equipment Co., Kansas City, Mo., now are being used in the far-away battle zones of the United States Air Forces. These trailer “Labs” are engineered and equipped to roll into action at strategic points on the various war fronts and to keep in repair the vital instruments on which the safety and success of flight depends.

Although the laboratory equipment is not manufactured by Keystone, the huge air-conditioned trailers are engineered at the No. 2 Keystone plant where they are fitted with the delicate instruments.

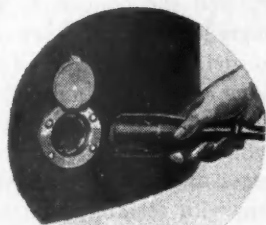
NO OTHER BRAKE EQUALS THE WARNER ELECTRIC BRAKE *for* SIMPLICITY

A connection to the truck battery is all that is needed. Nothing special is required.



Only a few flexible wires. Nothing to freeze or chatter. . . . No complicated mechanisms.

PLUGS IN AND OUT LIKE A RADIO



The plug-in cable provides current for brakes, tail light, stop light and running lights.

Right now, the needs of our armed forces come first! However, if you are on the "essential" list we can supply you with brakes.



With Warner Electric Brakes, there is full clearance under tractor and trailer—nothing to get knocked off or leak—no exposed braking equipment—no rods to rattle—no tubing to split—no condensation to freeze. Warner Electric Brakes require only a wire to each wheel and will operate under water without short circuiting. Minimum maintenance cost.

WARNER ELECTRIC BRAKES

WARNER ELECTRIC BRAKE MANUFACTURING COMPANY • BELOIT, WISCONSIN

TRUMAN REPORT SUPPORTS INDUSTRY

(CONTINUED FROM PAGE 41)

parts and new vehicles and their distribution by rationing and otherwise: the control of the manufacture of rubber; the control of the distribution and rationing of gasoline and oils and the control of manpower are centered in different agencies of the government: The War Production Board, the Office of Rubber Director, Petro-

leum Administration for War, the Office of Defense Transportation and the War Manpower Commission, respectively.

9. In a substantial way, the manpower situation has also been controlled by the War and Navy Departments, through the Selective Service Bureau.

10. It may be readily seen that such a complicated control as described in the preceding paragraphs, unless accompanied by the most cordial and intimate cooperation at all

times, would result in the creation of shortages, bottlenecks, inefficiency, extravagance, waste and grave interference with the National economy and the National Defense. To a degree, there has been cooperation between all of these agencies; in some cases, there has been cordial and effective cooperation, in others, it has been a case of "too little and too late" and there have been resulting difficulties in movement of traffic, war materials, necessary food supplies and other merchandise, and in the transportation of soldiers to and from encampments, and to and from their homes, and to and from ship-side upon embarkation.

11. There should, hereafter, be either a more intimate and effective cooperation and coordination by all the agencies in charge of the activities which enter into bus and truck operation and replacement of necessary parts and new machines, or past difficulties will continue and grow more acute.

12. However, in order to secure more complete cooperation and coordination of effort by the many different agencies engaged, in bringing about one definite result, the Committee believes a very thorough-going study should be made to determine whether or not one strong Director of Truck and Bus Operation, allocation of steel for the manufacture of new parts and new machines, as well as oil and gasoline and tires should not be given power over all of these activities, or whether or not some one of the agencies already connected with these services should not be given such power.

13. The Committee has also reached the conclusion that a thorough scientific study should be made to determine proper future allocations of carbon and alloy steel for the manufacture of parts and new vehicles (different types and sizes of buses and trucks) in order to ascertain with certainty that enough, both of parts and new vehicles, shall be manufactured to at least maintain present standards which are now recognized as over strained and inadequate, in fact, it is believed that there should be enough manufactured to prevent the recurrence of this emergency in our traffic by bus and truck throughout the Nation."

END

(Please resume your reading on P. 42)



UNCLE SAM IS DELIVERING THE GOODS,
and we are doing our level best to help him.
Building military semitrailers and such other
equipment as we are capable of.



Nor have we forgotten that every War Bond
purchased helps drive a nail in the coffin of the
Axis. Have you?

EDWARDS



EDWARDS IRON WORKS, INC., SOUTH BEND, INDIANA

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From the heart of America to every front

Fighting Trucks

DEPLOYED on the longest battle-lines the world has ever known, millions of gallant young men, turned warriors, are hurling back the enemies of all free men. Many of them you know, for hardly a household in the land is unrepresented—certainly none is unaffected.

The whole future of every one of us depends entirely on the courage, skill and equipment of these American fighting men. That is why you are doing without badly needed new trucks—and working your veterans so hard.



by Diamond T!

And that is why we at Diamond T have doubled and redoubled our facilities . . . to build Diamond T Fighting Trucks, to build them well, to build them at a pace that outstrips the peacetime heavy

truck output of the entire industry!

So, from the very heart of America go thousands of Diamond T Fighting Trucks to those battle fronts that need them most. And the heart of America goes with them, every one.

DIAMOND T MOTOR CAR COMPANY, CHICAGO

DIAMOND T MOTOR TRUCKS



**AWARDED FOR
OUR PRODUCTION SPEED
IN EQUIPPING AMERICAN
FORCES FOR "VICTORY"**



★ ★ ★ Today, just below the Stars and Stripes, a new flag flies at Brown Steel Tank Company, in Minneapolis, Minnesota.

It is the flag of the Army-Navy Production Citation for Excellence.

By the workers, the officers and executives who operate this plant the award is deeply appreciated. The honor and recognition is a personal reward to every man and woman at Brown Steel Tank Company. It is also a source of pride to each and everyone of our suppliers. They, too, have given their wholehearted cooperation that production here might achieve this honor.

On July 6, 1943, the men and women of Brown Steel Tank Company received the "E" award with formal ceremony. Looking into the future, they pledge renewed efforts towards accomplishing even greater production that their equipment may aid in speeding "V" day — the day when we may all celebrate Victory together with our fighting men all around the globe.

Halsted Brown
Arthur E. Brown

BROWN STEEL TANK COMPANY

NOT AFFILIATED • ONE OFFICE, ONE PLANT • MINNEAPOLIS, MINNESOTA

COOKING WITH GAS ... AND OIL

(CONTINUED FROM PAGE 45)

and a new carburetor. This truck has had two rebuilds: one at approximately 50,000 miles and the other at 86,000. The latest oil-change was made at 102,393. The filter cartridge was renewed at that time and again at the 107,860 mark. Oil and gasoline consumption average 1063 miles per qt. and 18.9 miles per gallon, respectively.

We regularly use SAE 30 the year 'round. When new trucks were available, we operated them on lighter oils during the "break in" period—SAE 10 for the first 500 miles, and SAE 20 for the next 1000. And in crankcase filling we find it more economical to keep the top level 1/2-quart short of "Full". Filling to indicated capacity seems to have a tendency toward increased oil use.

Gasoline Conservation

Most of our present gasoline conservation program was in effect long before rationing came into the picture. Our fuel savings since then have been due largely to mileage curtailment. The latter amounts to about 35 per cent less than our pre-war yearly average. And our drop in gasoline consumption holds pretty close to the same ration.

Because practically all our units now carry heavier loads than they formerly did, we actually have effected fuel savings which miles-per-gallon figures cannot show. We will develop this thought more fully in connection with our comments on tire conservation.

All of our trucks now operate at a maximum governed-speed of 35 m.p.h. This setting is a 5 m.p.h. reduction for city travel and 10 m.p.h. for interurban runs. However, all these speeds would seem to be within the "fuel economy range."

One of the best gas savers we know is a "high" spark. Therefore, in setting the spark on vehicles of some manufactures we advance it to the "ping" position, and then retard until the noise stops. After that, we can check with our tachometer, which has a provision for testing spark set.

On trucks of other manufactures testing by means of a timing light seems to give the best results. However, this method furnishes no way to

check against "load" conditions, so we have to depend on drivers to tell us if we have over-shot our "high spark" objective. In our case, dependence on drivers for information regarding the operating results of any adjustment is entirely satisfactory.

Vehicles are fueled from an outdoor pump located just inside the yard's entrance gate. Along with other duties a gateman gasses up trucks as they need it, and reports speedometer readings and the amounts of gasoline pumped to each

unit. This is done on the latter's return to the plant in the afternoon. The light is good, and there is no occasion for over-filling.

We keep a simple but accurate record of mileage and of gasoline and oil consumption on a monthly basis for each vehicle and for the entire fleet. For this purpose we use a loose-leaf binder, taking a 6 inch by 9 1/2 inch sheet. These are stock items obtainable at any dime-store stationery counter. The sheets come horizontal.

(TURN TO PAGE 88, PLEASE)



with BLOOD BROTHERS UNIVERSAL JOINTS

Whatever your requirements, if your problem is to transmit power at an angle, our field and factory experience of more than 30 years is at your command. Our Engineering Department will gladly submit quotations covering your requirements.

BLOOD BROTHERS MACHINE COMPANY
Division of Standard Steel Spring Company
ALLEGAN, MICHIGAN

Backed by
over 30 years'
Factory and Field
Experience



SPECIFY
Blood Brothers
UNIVERSAL JOINTS
FOR RELIABILITY AND
ENGINEERING EXCELLENCE

COOKING WITH GAS ... AND OIL

(CONTINUED FROM PAGE 87)

ly ruled. The vertical column-rulings we put in by hand. The individual columns are headed up for the entry of date, mileage, gas used, average miles per gallon, oil used and average miles per quart. Recap sheets accumulate monthly figures to provide annual totals.

We watch very closely each fleet-

unit's gasoline and oil consumption record. At the first sign of increased use of fuel or lubricant, we check up, and apply the proper remedy. However, the differences shown month after month by the consumption figures on most of our units are surprisingly narrow. Usually, the variation over a period of several months will amount to no more than $\frac{1}{4}$ mile per gallon of gas or a few miles per quart of oil.

One condition that tends to hinder our efforts at getting efficient car-

buretion is an increasing amount of gummy sediment which clogs bowls and other carburetor parts. This situation seems to be rather general throughout this area. The gum may be due to the quality of the fuel now available. The sediment may be caused by its presence in tank cars and trucks.

Our antidote is to dis-assemble the carburetor, whenever it fails to function properly, and cleanse its parts thoroughly with a prepared cleaner. We now perform this operation regularly, as a routine item, in connection with our periodic tune-up.

All our trucks are equipped with temperature gages. Drivers watch these closely, and report any indications of over-heating. When this condition occurs, it generally is a sign that a radiator has "scaled up." The latter situation stems from the high lime-content in the local water-supply. Our remedy for this radiator ailment is to flush out the radiator, fill with fresh water and then add a de-scaling preparation. The latter also acts as a solvent, dissolving any oil or grease present in the cooling system.

END

(Please resume your reading on P. 46)

UNION ICE IS HOT ON CONSERVATION

(CONTINUED FROM PAGE 49)

really it works out well in practice. We have governors installed on all of our trucks, but as long as a driver behaves himself we leave the governor open. But if he gets obstreperous and forgets what he has been told, we clamp down on him and hold him, through the governor, to a slow speed. I found one driver who had been given a ticket for speeding. I put his governor down to 25 m.p.h. and kept it there for two years.

We tell our drivers not to idle the engine, but to shut it off when they are stopped. Of course we have no way to enforce the instructions, except the honor system I have mentioned, but that seems pretty satisfactory. For example, I have driven by our trucks fairly frequently while the driver was serving a customer and I have yet to find one whose engine was idling while the driver was gone. That was on fairly long stops. Of course there is considerable idling on brief pauses.

(TURN TO PAGE 90, PLEASE)

FLOW BENCH INSPECTION

*assures accurate
functioning of*

HANDY GOVERNORS



The Flow Bench is a practical device for simulating the conditions of engine operation. By means of this device, engine manifold and carburetor Venturi vacuums for any selected speed can be accurately reproduced. This type of device, first used as an inspection tool for carburetors, is used by King-Seeley Corporation for the production and final inspection of Handy Vari-Speed Governors.

As a result of this inspection, Handy Governors are accurately checked for performance under conditions which are identical to those under which they will have to operate. Not only is the no-load speed set on this Flow Bench, but operation is checked throughout the governing range. In addition, the surge, cheat and operation of the distributor vacuum valve are checked.

This method of inspection assures the effective and accurate functioning of Handy Governors when they are put into service.

KING-SEELEY CORPORATION • Ann Arbor, Michigan

HANDY *Visible Action* GOVERNOR

World's Largest Manufacturers of Automotive Governors

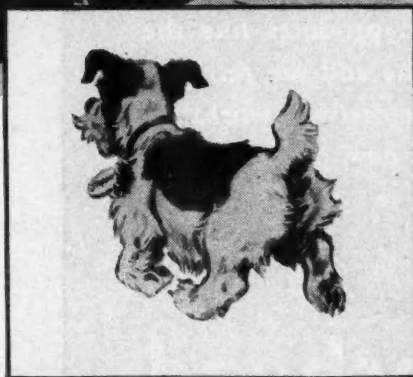
Tough and Ready



1 Aboard U. S. Aircraft carrier in the Pacific. Flight deck thronged with battle planes. A fighting team, ready for a tough job.

Official U.S. Navy Photo I.N.S.

"Stopper The Pup" is doing his job in these tough times. In the national magazines every month . . . on signs and displays selling safe brakes and American Brakeblok Brake Lining to careful drivers everywhere.



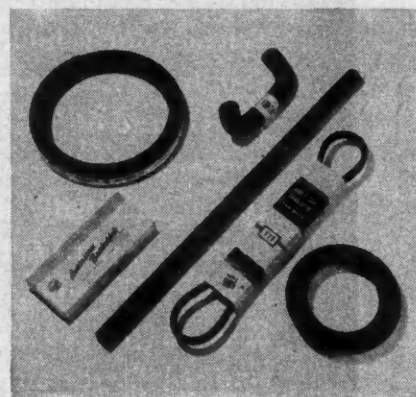
American Brakeblok Division, Detroit 9, Michigan



American Brakeblok products are quickly available through 37 NAPA warehouses and a nationwide group of jobbers.



2 American Brakeblok's **FREE** Brake Lining Advisory Service suggests one or more of the many specialized heavy-duty brake materials for your individual needs. Whether you operate manual, vacuum or air brakes, the right brake lining will improve operation. Better your best record . . . use this helpful Advisory Service.



3 In addition to superior brake linings in all forms, American Brakeblok makes a complete line of fan belts, woven and molded clutch facings, straight and formed radiator hose. Today's tough job is to keep transportation moving, and your best bet to do this is to specify American Brakeblok products.

**American
Brakeblok**
BRAKE LINING

AMERICAN
Brake Shoe
COMPANY

UNION ICE IS HOT ON CONSERVATION

(CONTINUED FROM PAGE 88)

We have another strict rule as to the treatment and handling of drivers and that is that they never are to be "bawled out"—not by anyone. I figure that if you can't get a driver to do something, or to follow the rules, without "razzing" him, you can't get him to do it that way, either. We do everything possible to keep

the engine temperature at the most efficient level by means of thermostats.

We time the ignition to the fuel, rather than follow the manufacturer's recommendations. You practically have to, or you get too much ping. We use a jet analyzer and if the ratio runs less than $14\frac{1}{2}$ to 1 we change the jet until we get that ratio. We retard the spark about 5 deg. on the distributor. By firing at a later point we lose economy, about 3/10 to 5/10 of a mile per gallon. But we consider

it is much more important to have a smoothly-running engine.

We realize the value of preventing wastage of gasoline by avoiding spilling at the pumps when the tanks are being filled. To that end we have installed a patent attachment which automatically shuts off the gas when the tank is full.

We salvage whatever is possible, which means practically everything. We have re-made steering columns, re-sized pistons, repaired fenders, bodies and doors, built up and re-cut a gear, although not at the point where the gear has to be subjected to severe strain or stress. We have taken a distributor gear, built it up and re-cut it. We have a false floor in our trucks and a steel ice pan below. We have built in new ice pans. We used to give away much of this stuff to the junk man before the war forced the salvaging of everything possible and made new parts so difficult to get. We use arc-welding, acetylene welding and machining in these salvaging processes. The cost of a salvaged part is about two-thirds that of an original part. The question of whether or not a part can or should be salvaged is determined partly by whether a new part can be had and partly by whether it is cheaper to buy new or repair.

We are rebuilding bodies right along, also transmissions, differentials, motors, distributors, etc. A new fuel pump, however, can be obtained in exchange more cheaply than we can rebuild one. If we can new material for these jobs we use it. If we can't, then we use whatever we can get.

We recognize fully the extreme importance of oil economy. We adopt every plan and idea we can to that end and we watch constantly to see that we are missing no opportunity along that line and that our oil program is operating with thorough efficiency. We check the crankcase oil level every night. We change the oil in the crankcase at about every 2000 to 2500 miles. When the oil level goes down farther than it should, or when the engine uses more than 2 qt. a week, we pull it down and put in a new set of rings. Many times the oil gets below the proper level before it is due for a change. Then we have to add more oil. I like to have the trucks use about one quart

(TURN TO PAGE 92, PLEASE)



The War...And You!

Friend—don't think this war doesn't affect you. It does. It's pushing the world twenty years ahead of time; stimulating the development of devices which, after the war, will change materially the way you now live. Your life will be fuller then, more exciting, more comfortable. And just as Weatherhead has helped build products like the automobile, the airplane and the refrigerator in the past, in tomorrow's world we will be building these new products now denied us by the war.

Look Ahead with



Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO
Manufacturers of vital parts for the automotive, aviation,
refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

I'D LIKE TO TELL YOU

The Inside Story of Synthetic Rubber



The public has been led to believe that plenty of new tires and tubes made of synthetic rubber will be available very soon—**BUT THAT IS NOT THE CASE**



HERE are the facts—and every patriotic American should know them.

After Pearl Harbor, we had in this country a huge government-owned stockpile of natural rubber. It had to take care of all tire needs—both military and civilian—of this country and of a large share of our allies' needs as well.

This stockpile could not be maintained or replaced.

It was absolutely essential that if we were to win the war we should produce our own synthetic rubber—in huge volume—and at once.

But the whole synthetic rubber situation was utterly upset and confused. There was bickering—and arguing. Everybody had a different idea.

Then the Baruch committee was appointed. It did a fine job—quickly. It clarified the problem, pointed out the fact that this country was in a desperate position—and then prescribed the remedy.

Following the Baruch Report, Mr. Jeffers was appointed Rubber Director. He and his staff, ably aided by the petroleum, chemical and rubber industries, have done what, at the time, looked like an impossible job.

Almost overnight they have built a new multi-million dollar industry in this country which, by next year, will have a producing capacity of 800,000 tons of synthetic rubber annually—more total rubber tonnage than this country has yet used in any normal year!

Most authorities agree that with these new government-owned synthetic plants in full operation, ALL tire manufacturers will have plenty of raw synthetic rubber by the Spring of 1944 . . . **BUT NOT NECESSARILY PLENTY OF TIRES.**

The stockpile of natural rubber is now so low that the government has ordered ALL passenger tires and tubes—both civilian

and military—made entirely of synthetic! This tremendous job of conversion must be completed by the Fall of 1943.

That puts the rubber industry in a tough spot—and here's why—

Even though rubber chemists have been experimenting with synthetics for several years, most of the so-called synthetic rubber tires developed to date were only partly synthetic. They all contained some natural rubber.

But the making of tires from 100% synthetic rubber is quite another problem.

And it's a tough job. It took the industry 40 years to build natural rubber tires up to the fine point of quality, safety and service that we had before the war.

Yet we and other tire manufacturers are trying to equal those standards in a few months' time, with tires made entirely of a synthetic material that takes longer to process than natural rubber—takes more machinery—and more labor.

It is a situation that all of us must look squarely in the face. And here are the straight facts.

1. No one tire manufacturer has any more knowledge in building all-synthetic tires than any other. The research chemists and engineers of the industry are working day and night in unison to lick the unsolved problems that now confront the industry. **ALL INFORMATION IS AVAILABLE TO ALL MANUFACTURERS.**
2. The first all-synthetic passenger car tires to be built on a production basis are only just now coming off the lines in limited quantities.
3. No satisfactory all-synthetic truck tires have been built as yet by anyone.
4. No satisfactory all-synthetic tubes have been built as yet by anyone.
5. There will be very, very few new tires of all-synthetic rubber this year.

6. It will probably be the middle of next year before civilians can get the new tires they need—even though there will be plenty of raw synthetic rubber.

7. As the Baruch Report stated in no uncertain terms—the last half of '43 and the first part of '44 is the critical period—and I mean critical!

So I say to every patriotic American—**"Take extra care of your present tires"**.

Drive slowly—not over thirty-five miles an hour (very important in hot summer weather).

Drive carefully. Avoid ruts, car-tracks, stones and rough roads.

See that air pressure is checked once a week.

Don't scrape your tires against the curb.

Don't make jack-rabbit starts or quick stops. Take curves and corners slowly.

Have your tire dealer check your tires regularly for cuts and abrasions, and repair them before they go too far.

Get your tires recapped before they get too smooth.

★ ★ ★

By the end of next year, synthetic tires should be available for civilians in sufficient quantity to keep all essential cars and trucks on the road.

Meanwhile, those of you who are privileged to buy new tires of synthetic rubber will find the name Seiberling on these tires just as reliable a mark of quality as it has always been on tires of natural rubber.

Keep in touch with your Seiberling dealer. He is an expert in rubber, too, and can help you save your tires.

J. P. Seiberling
PRESIDENT,
SEIBERLING RUBBER COMPANY
AKRON, OHIO



SEIBERLING

Experts in Rubber

Wartime manufacturers of Bullet-Sealed Tubes and Military Tires for our armed forces—Bullet-Sealing Gasoline Tanks—Rubber Floats, Boats and Pontons—Rubber Parts for Gas Masks, Airplanes and Tanks. Also makers of Tires and Tubes for passenger cars and trucks—Sealed Air Tubes—Rubber Heels, Soles and Mechanical Goods.

UNION ICE IS HOT ON CONSERVATION

(CONTINUED FROM PAGE 90)

of oil a week. Then I know that everything is going well. But, believe me, I don't wait long to act if I see that an engine is using too much oil. A set of rings is a lot cheaper than a quantity of wasted oil. It doesn't take many gallons of oil to buy a set of rings.

We do not differentiate between

the SAE rating of our oil in summer and winter. We choose the SAE rating of our oil more to conform to the condition of the engine than of the atmosphere. Maximum viscosity (SAE) of oil is 40. On jobs that have had a rebore or new rings installed, we start with No. 10 and run the engine on that for about 2000 miles. When the motor has become well loosened up, we change to No. 20 and run on that for from 8000 to 10,000 miles, or until the motor shows it is using a little extra oil. Then we

use a No. 30 for the next 15,000 to 18,000 miles, as a rule, when we put in a No. 40 until we can get around to giving the motor attention. We figure that when a No. 40 oil has become necessary, it is nearly time to do something about it. If it is due for an overhaul at that time, we proceed with that. If it is not due, then we probably will put in a new set of rings and run the truck for another 18 months, or from 10,000 to 15,000 miles, unless an overhaul falls due in the meantime.

To keep the engine in shape we use a special oil that dissolves the sludge and helps clean out the screens and oil lines. To a certain extent it also cleans up the plugged oil rings.

Once a year we pull the oil pan and clean out the screens thoroughly. Our trucks are idling so much, in the nature of our delivery business, that we have lots of sludge, plugged screens and oil lines, etc.

We reclaim the crankcase oil drainages to a certain extent. If the oil from the crankcase looks good, we reclaim it ourselves. If it is too dirty for reclamation, we sell it. We have our own reclaimer. If it's your own oil and properly selected, the reclaimed oil is just as good as or a little better than the original. I have had the reclaimed oil analyzed and proved this. The extra refining takes out the light ends that they don't get the first time. About 25 per cent of the oil is reclaimed. It costs about as much as the new oil. We use the reclaimed oil only to add to the other oil and bring up the level in the crankcase. Although it costs about the same as new oil, we think it is better than the original oil.

We keep records of our oil consumption and oil costs. We get about 250 miles per quart of oil. That doesn't sound like much, but when you consider that we're running a lot more engine miles than speedometer miles, it is much better. If the speedometer shows 50,000 miles, the engine has turned over somewhere near 150,000 miles. This is due, in part, to the fact that our trucks travel so much in low and second gear and so much up and down hills.

The use of oil filters has cut our oil costs about in half. We used to drain the crankcase every 1000 miles, now every 2000 to 2500 miles. I can't see that it has affected engine

(TURN TO PAGE 95, PLEASE)



Those gigantic coastal defense guns placed strategically along our shores will smash any enemy that comes near. But when they fire, there's plenty of damage down the gun itself.

Only rigid maintenance keeps these big guns in shape. Likewise, only rigid maintenance will keep essential cars running on the Home Front. Ferodo Brake Linings, with their safe stopping power, help save our necessary motor vehicles... and help conserve tires.

Ferodo for Road Safety

FERODO
BRAKE LININGS

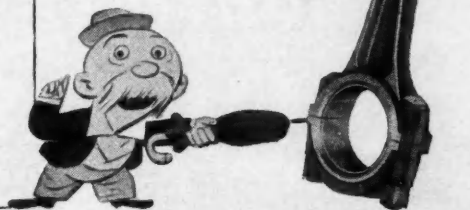
FERODO AND ASBESTOS, INCORPORATED, NEW BRUNSWICK, N.J.

Here's Where the Trouble Starts!



Just as there is a right and a wrong way to milk a cow, so is there a right and a wrong way to overhaul an engine for lasting efficiency. Motor-fouling oil pumping warns that worn engine bearings are letting excess oil burn to carbon on pistons,

*And here's
where Trouble
Starts on an
Oil Pumper*



rings, plugs and valves. Correction starts where the trouble starts—with replacement of worn bearings, to assure more "miles per overhaul" as well as maximum miles per gallon. Replace with Federal-Mogul Oil-Control Bearings.

YOU'RE THE GUY WHO FIGHTS in Overalls!

Have you ever asked yourself what you can do to help America win this war and win it speedily? If you have, the answer is: Stay right where you are, doing all you can to keep America's cars, trucks, buses and tractors rolling. *Without them we are helpless.*

Your job is a vitally important job. *Just any pair of hands can't replace your skill.* We

are doing our part by doing all we can to keep you supplied with service bearings. Let's work together for victory!

FEDERAL-MOGUL SERVICE • DETROIT, MICHIGAN
DIVISION OF FEDERAL-MOGUL CORPORATION

Replace with Genuine

FEDERAL-MOGUL



Oil-Control Bearings

KEEP YOUR MOTORS
IN

FIGHTING TRIM



★ Casite keeps motors in fighting trim—keeps them clean inside. It cleans out sludge and checks the formation of sticky, gummy deposits in the upper cylinder areas. That means clean, free-acting valves and rings.

Casite also helps oil do a thorough job—speeds its flow to all important friction points. Large scale truck and bus operators depend on Casite for better motor performance, longer life, and lower operating costs.

THE CASITE CORPORATION, HASTINGS, MICHIGAN

CASITE

CLEANS OUT MOTORS
★
KEEPS MOTORS CLEAN



UNION ICE IS HOT ON CONSERVATION

(CONTINUED FROM PAGE 92)

performance. But it has had a noticeable effect on maintenance costs. Engines last a lot longer on clean oil. We use filters with replacement cartridges. Our filters are cleaned and cartridges replaced about every 2000 miles, or whenever the oil begins to show a discoloration. Sometimes we change as often as once a month. It depends entirely on the color of the oil.

END

(Please resume your reading on P. 50)

HOW TO MAKE DEFERMENT APPEALS

(CONTINUED FROM PAGE 58)

When a registrant is classified in 1A previous to the time indicated on the accepted Replacement Schedule, file notice of appeal. We suggest this type of a notice which complies with the standard request of Selective Service:

Local Board #1
Newark, N. J.

Date
Re: Joe Doe
Order #2468

Notice: THIS IS AN APPEAL

Gentlemen:

1. As the employer of the above named registrant, we request a review by the Board of Appeals.

2. This registrant is a Dispatcher (rate clerk, expeditor or other). He is employed in an essential industry. He is an essential worker. Training is being given to a replacement. (Or—A replacement is not available in the event the registrant is a highly skilled man and declared irreplaceable.) We are operating under an approved Replacement Schedule dated Jan. 1, 1943.

3. The home office of this employer is New York, N. Y. The registrant works for his employer at the Newark, N. J., office at #10 Main St., Newark, N. J.

Very truly yours,

(Name of official signing letter of appeal.)

With the forwarding of this letter your appeal is perfected. The registrant's folder will be forwarded to

the board of appeals for a review. If they sustain the local board, notice will be given to you or the registrant. The registrant or you may appeal to the President within 10 days with this proviso: The registrant was classified by the board of appeal in either class 1-A, class 1-A-O, or class IV-E and one or more members of the board of appeal dissented from such classification.

Or the appeal can also be taken to the President by the State Director of Selective Service or the Director

of Selective Service on the ground that he deems it to be in the national interest or necessary to avoid an injustice.

An approved Replacement Schedule by your State Director is your staff, your life line in the event the board of appeals unanimously sustain the local board. It is not consistent to believe that a State Director, who has previously approved deferment, can do a turnabout and permit that man's induction. His au-

(TURN TO PAGE 98, PLEASE)

YOU CAN LOAD *and* UNLOAD YOUR TRUCKS—FASTER ! ! !

and SAFER
with

ANTHONY
HYDRAULIC

"TAILGATE LOADER"

★ ★ *Pays for Itself* ★ ★

● SAVES MANPOWER!

One man now does what 3 or more formerly did.

● CUTS LOADING AND UNLOADING TIME!

Trucks are loaded and unloaded faster—keeps them on the move.

● REDUCES HERNIA ACCIDENTS!

Loads are lifted to body or lowered to ground by powerful hydraulic hoist mechanism controlled by one convenient lever.

● STOPS ACCIDENTAL DAMAGE TO VALUABLE MERCHANDISE!

No skids, chains or cables to break or slip. Minimizes your damage losses.

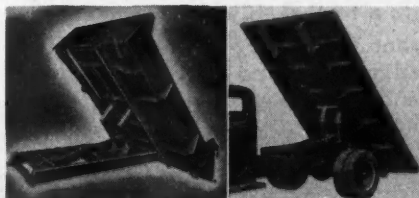


"Tailgate Loader" raising load from ground.



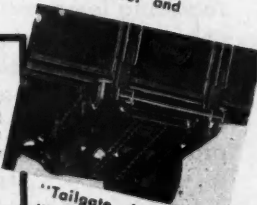
"Tailgate Loader" automatically stops at floor level and ground.

ANTHONY HYDRAULIC HOISTS and BODIES



LEFT—Anthony Hydraulic WAR MODEL Hoist Dump Bodies — are available.

RIGHT—Anthony Hydraulic ZB Boosters for Platform Bodies, also Platforms with Hoists.



"Tailgate Loader" locked up to body. Gate can be used conventionally.

ZB BOOSTER HOIST MAKES DUMP BODY OUT OF YOUR PLATFORM



NOW IN OUR
25th
ANNIVERSARY YEAR

ANTHONY COMPANY INC.
STREATOR, ILLINOIS

WRITE NOW FOR COMPLETE DETAILS
DEPARTMENT 62

HOW TO MAKE DEFERMENT APPEALS

(CONTINUED FROM PAGE 95)

thority would be in peril, the duties and responsibilities of his office vitiated. Therefore, is it not incumbent upon him to carry your appeal to the President?

DON'T appear personally before local boards pleading deferments. If your 42A has the pertinent information, it will speak for itself. Your

personal appearance may, in the event of an adverse decision by the local board, cause you to antagonize that board. Unless you are blessed with the eloquence of a Disraeli or a Webster your oratory will fall upon deaf ears.

From experience gained through trial and error methods, from words of wisdom by Selective Service officers, I say:

1. Forego the pleasure of a personal appearance before the draft board.

2. File your appeal in a written form.

3. Let the board of appeals study the facts, and

4. If your appeal is up for consideration by the President your facts will make a deeper and more lasting impression than your oral remarks to the members of the local board.

END

(Please resume your reading on P. 60)

IS A MISS AS GOOD AS A MALE?

(CONTINUED FROM PAGE 55)

shop workers is not so fraught with mystery as some would make it out to be, say CR&L officials. On the other hand it is not without complications, and an employer is due for a rude awakening if he thinks that all he has to do is put in a "Ladies Room," hire a couple of women, and let them sink or swim—"toss them to the wolves,"—they call it in some shops.

When this pioneer employer of women first committed itself to the experiment, it had no guiding precedent so far as the bus industry was concerned. On October 1, when the experiment began to take on sizeable proportions, Mrs. Ingeborg L. Lorenz was made personnel director in charge of women and she now has responsibility for most of the problems that have to do with the selection and employment of women as bus operators and shop employees. In the beginning, however, and before the experiment had grown to a size sufficient to warrant a woman-power specialist, the company had to find its own answers to the many problems that arose. It did an excellent job, too, as subsequent events have proved. In the initial stage, sole responsibility rested with three men—Walter Carr, vice-president; Paul A. Rust, general superintendent and Howard M. Smith, superintendent of equipment.

A stickler for cleanliness among its employees as well as on its buses and in its shops, the first concern of CR&L was to provide special clean-up facilities for women. In providing "Powder Rooms" this company went "all out." These are not merely rooms set aside and labeled "Women's Room" but are smart, clean quarters where the gals can get rid of grime (TURN TO PAGE 98, PLEASE)

GRIZZLY
REG. U. S. PAT. OFF.
BRAKE LINING

Rolls of cured, moulded roll linings ready for machining at Grizzly's new Paulding plant.

Prevent War Transportation Tie-ups

● Only the very best of replacement parts are justified now—when non-productive man-hours and equipment-hours spell waste beyond recovery.

In brake linings that means Grizzly because 27 years of "stop" engineering have made Grizzly Brake Linings most efficient, requiring fewer adjustments through a substantially longer life.

Grizzly precision machining saves installation time, too, and Grizzly Multiple-coverage Segments provide immediate availability of a wide range of sizes with a remarkably low inventory. Grizzly will help you to prevent idle equipment-hours by providing more miles with fewer adjustments and ready availability

of the size and type needed—all moulded—in rolls, blocks, segments and drilled sets.

New **GRIZZLY** Catalog contains complete data on passenger car, bus, truck, trailer and tractor brake lining requirements. Ask your Grizzly Distributor for your copy or, write direct—now!



GRIZZLY MANUFACTURING COMPANY
PAULDING, OHIO
PLANTS AT PAULDING AND LOS ANGELES
Warehouse Stocks In Principal Cities



Soft pressure does it!

● Skeptics shook their heads. It couldn't be done. They didn't think a "soft-pressure" steel ring was possible—because they failed to realize that the Steel-Vent principle permits the use of a lighter, more flexible inner ring.

Thus oil can be controlled without the injurious after-effects common to high-pressure methods.

All over the country, truck and bus operators testify

to Steel-Vent's performance and exceptional life, under all kinds of conditions and in all kinds of cylinders.

Use them with confidence—in any engine—rebored, resleeved or badly tapered. Your distributor has a Steel-Vent set "Motor Engineered" for every job you have.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Mfg. of Canada, Ltd., Toronto

HASTINGS

STEEL-VENT PISTON RINGS

Tough on oil-pumping. Gentle on cylinder walls

IS A MISS AS GOOD AS A MALE?

(CONTINUED FROM PAGE 96)

and pretty up before going home. Such facilities are an "absolute must" for anyone contemplating the employment of women.

The Rest Room Problem

Both the rest rooms of women mechanics and women drivers are worthy of more than casual mention

because it is a new and important subject and one which might very well mean the difference between success and failure with women employees. The rest rooms for the women mechanics are somewhat less feminine in their scheme of decoration than the women drivers' rooms. The former are purely utilitarian, with plenty of locker space, whereas the drivers' rooms are strictly feminine. Windows are draped with smart striped monk's cloth curtains, with potted plants here and there on the

sills. Woodwork is maple finish to match the chairs, tables and settees. Mirrors, and plenty of them, obviously are another must for women's rooms. Metal furnishings and fixtures being unobtainable, lockers, partitions and screens are all of wooden construction, painted to simulate metal.

Providing suitable facilities for women is merely the beginning. The really big step follows the pattern of the old recipe for rabbit stew—"first catch your rabbit," and "first get the women" was the main problem for CR&L. Since there is no such thing as a ready-trained woman bus mechanic, this company had to locate women with an inclination toward mechanical work and then train them—from scratch.

It so happened that a number of women who had formerly worked in a clock factory were available at the time. They possessed a measure of mechanical aptitude but had no previous automotive training whatever. The latter apparent handicap actually proved to be an asset, for while the women had more to learn, they had nothing to unlearn—no previous notions to be disabused.

In developing the training program for women the same plan used to train male apprentices is employed, namely, to let them serve as helpers to experienced mechanics and thus learn by observation. Women quickly get the hang of a job by seeing it performed and readily become proficient when permitted to try it themselves a few times. However, they have more difficulty than men in trying to follow printed instructions—principally because of their unfamiliarity with automotive lingo. Then, too, as a rule they are not greatly inclined to learn the correct terminology of the parts with which they work. However, if they do a good job of adjusting or rebuilding a unit, no particular harm is done if they refer to it as a "thingamajig."

Dirt Doesn't Feaze 'Em

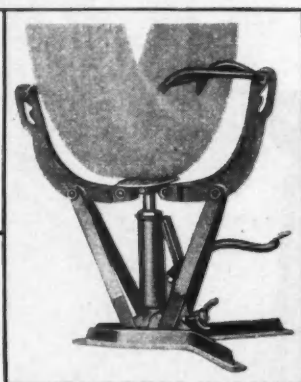
According to Howard M. Smith, superintendent of equipment, women can be assigned to any job a man can do except those requiring heavy lifting. Contrary to most male belief, they are not afraid to get dirty but insist on cleaning up afterward. Ordinarily they are better housekeepers

(TURN TO PAGE 100, PLEASE)

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Pacific Coast and Canadian Slightly Higher



FULL SIZE BISHMAN HYDRAULIC TIRE SPREADER

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Foot
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No Priority required. Newest type. Speeds up OPA inspections and tire repairs. Handles all tires from 4½ in to 12 in. heavy duty truck and bus tires.

"Works like a Charm"—smooth, easy, FAST! Just step on pedal and the built-in 2-ton Hydraulic Jack spreads tire to any desired degree up to full width. To completely invert tire—for skiving and repairing—just set the adjustable arm.

Portable or stationary. Large base with holes for fastening. Order from your jobber today—or write for details.



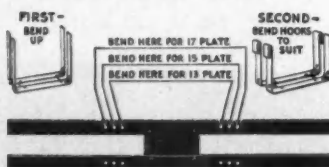
BISHMAN Strap Type BATTERY CARRIERS



Strong strap with permanently attached iron ends firmly press-locked. Mfg. under patent license. No. 188, short type, weighs ¼ lb.; No. 181, long type, ½ lb. Ask your jobber or write us.

BISHMAN Battery Cradle or Replacement Box

One size fits most cars. No tools needed—simply bend. Has holes punched to make easy bending and to mark place for bending. Made of 16-gauge STEEL—strong enough to support heavy batteries. No. 230, weight each 1½ lbs.—25 to bundle. Ask your jobber or write us.



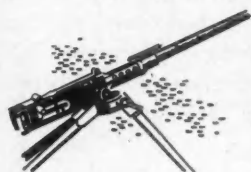
BISHMAN MFG. CO., 1101 So. 2nd Street, Minneapolis 15, Minnesota



Light for a Mechanized Army

On tanks, trucks, armored cars, full tracks, half tracks, gun carriages and other military vehicles, Guide lighting equipment is "rolling along" with the fighting forces. It has lighted the desert sands of Africa, and will continue to serve on every front.

Guide Lamp is well qualified for its wartime assignment, through years of designing and manufacturing lighting equipment for cars, trucks and buses. The skill of the men and women who work "on the line," the experience of Guide engineers and the "know-how" of production management are concentrated on doing the job well . . . and fast.



MACHINE GUN BARRELS

Guide Lamp is also supplying machine gun barrels. This is precision work, demanding skilled hands and accurate workmanship.



CARTRIDGE CASES AND AIRCRAFT PARTS

Since before the war, Guide Lamp has been turning out large quantities of accurately-drawn, accurately-machined cartridge cases for Army Ordnance. Aircraft parts for the Air Forces are also in full production.



COMPLETE SUB-MACHINE GUNS

These hard-hitting infantry weapons represent another assignment. Sub-machine guns are manufactured, assembled and tested at Guide Lamp.



The service star for continued high achievement has recently been added to the Guide Lamp Army-Navy "E" flag. Guide is contributing in full measure to America's war effort.

Guide
LAMP

DIVISION OF

GENERAL MOTORS

BUILDER OF AUTOMOTIVE LIGHTING EQUIPMENT

IS A MISS AS GOOD AS A MALE?

(CONTINUED FROM PAGE 98)

than men and they keep their work benches neater and more orderly. They are more careful in handling machinery and tools and infinitely more cautious in approaching an assignment that is new or strange. They have no tendency to wade in with a hammer and chisel and later learn that a wrench should have been used.

Women are more meticulous in following instructions. They adhere exactly to recommended tolerances whereas men are more inclined to feel that an adjustment is good enough if it is fairly close. As they gain familiarity with their work, women may get the same as men in this respect, but right now most of them don't know what might happen if they deviate from exact instruction. For example, one girl was asked what would happen if she failed to do exactly as told in assembly a small

engine accessory. She replied, "I don't know, maybe the wheels would fall off the bus."

As previously mentioned, women break in to their job under the guidance of a capable mechanic. When they give evidence of having mastered their work, they are put on their own. The idea is to help the women gain confidence, and self reliance. CR&L does not attempt to make all-around mechanics of its women shop employes but is satisfied if they are able to perform three or four kinds of work well.

Speaking of cost—the rate of pay for women is the same as for men doing equivalent work. However, if a job requires a certain amount of male assistance—heavy lifting, for example—then the rate of pay is one grade lower than for men.

Things Women Can Do

CR&L does not claim to have explored the possibilities of women workers other than to merely scratch the surface. In their shops at Bridgeport and Waterbury women at the moment are performing such tasks as overhauling and rebuilding hydraulic transmissions, clutches, air compressors, diesel fuel pumps and injectors, all air valves, treadle and relay valves. They also handle all phases of repair and rebuilding of electrical units, including generators, starters, ignition distributors, electric fuel pumps, and fareboxes. Windshield wipers, thermostats, centrifugal governors and all air shift mechanisms are other items on which they quickly become expert.

Women as yet have not done any painting but one has shown distinct ability as a letterer and has also done some inside touch-up work. Another garage job at which women shine is cleaning. Born housekeepers, they have it all over men in speed, thoroughness and efficiency.

What has been done thus far is but the beginning. CR&L believes there are countless other items of shop work not yet tried which women can do. For example, many items on the inspection line can be handled by women and this company is now studying its routine with that idea in mind.

No one questions woman's ability to handle a grease gun but the idea prevails that the job is too messy to
(TURN TO PAGE 102, PLEASE)



"EVERYBODY SPEAKS WELL OF GRAFILD"

... and it is no accident. Our many years of research leadership are paying Grafild users big dividends. For with Grafild they lick the tough jobs and please the fussy users. There's a reason for that happy Grafild reputation. Reline with Grafild and get that *certain* feeling.

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CERTAIN FEELING



RELINING WITH
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ROLLS - SETS - SLABS - BLOCKS
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**DOWN
BUT NOT
OUT!**



Millions of motorists—truck, tractor and bus operators are being told constantly to "Look for this Sign" and "let a man who knows how" repair your tubes.

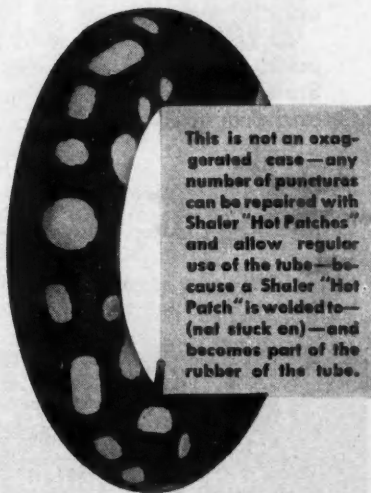
At present Priorities are not required for Shaler Vulcanizer clamps but the requirements of our Armed Forces and rated War Orders take practically our entire output. Rated orders also require most of our production of the large G-8 and G-9 Streamliner "Hot Patches" as well as replacement valves; consequently the supply available for civilian use is limited.



THESE HALF OUNCES OF RUBBER Keep Equipment Rolling...Save Tons of Rubber for the ARMED FORCES

● Tubes can be repaired many times. Punctured tubes may be down but as long as there is life in the rubber they can be repaired in any number of locations—if repaired safely and permanently.

Tube repairs made with Shaler "Hot Patches" insure the motorist against unnecessary failures which may ruin not only the tube but tire as well. Play safe—save rubber and make all your tires and tubes last longer by using only genuine Shaler "Hot Patches". THE SHALER COMPANY, Waupun, Wis. and Toronto, Can.



This is not an exaggerated case—any number of punctures can be repaired with Shaler "Hot Patches" and allow regular use of the tube—because a Shaler "Hot Patch" is welded to—(not stuck on)—and becomes part of the rubber of the tube.

SHALER
Streamliner
"HOT PATCHES"

IS A MISS AS GOOD AS A MALE?

(CONTINUED FROM PAGE 100)

appeal to a woman. Maybe so, but CR&L has a woman greaser on its "four-man" lubricating crew and every one of the male crew members vouches for the fact that she's doing her full share of the work.

That brings up the question as to how the "boys" and "gals" get along together. In one word the answer is

"swell." By bringing a refining influence into the shop, women have a tendency to sweeten up things, CR&L reports. As experienced elsewhere—men tend to be less boisterous and more industrious when women are around. Strangely enough the men don't resent them but rather like the idea and show every inclination to help them make good. Recently an out-of-town mechanic applied for work in the Waterbury shop and on seeing the women workers remarked, "This looks like a nice place—I won-

der if my wife could get work here." That is the attitude CR&L is striving to cultivate.

Supervision of women is little different than supervision of men, this company says. Both are people and both have the same human weaknesses and strong points. Women's feelings are more easily hurt and they don't take kindly to scolding. They appreciate praise, and foremen are instructed to tell them when they do a good job and to give credit where it is due. Women can't stand monotony—they seem to need more variety in their work. Keep the job interesting through variety where possible and by praise for accomplishment and women will do a good job, CR&L finds. Also it learned that women don't like feminine supervision. It was tried but didn't work. For some reason women don't like to take orders from another woman. Male supervision, they say, is less inclined to be "picky," and more prone to praise a woman's work.

What type of women does CR&L employ and where do they get them? As to type there is no preference—short, tall, light, heavy, blonde or brunette, all are acceptable if physically fit. The age of shop workers is between 25 and 35 and for cleaners and washers between 30 and 45. Ninety per cent of the women are married.

There is no easy formula for obtaining likely prospects, says CR&L, especially in their territory, where the demand for help exceeds the available supply. Other employers have worked to the limit newspaper advertising, employment agencies and all other likely means of obtaining employees.

The only successful means found by this company is to go out and search for prospective employees. It is virtually a door-to-door proposition. As yet male employees haven't been asked directly to invite their wives and relatives to apply for work but the idea is being seriously considered.

In summing up—the attitude of this company toward women employees is entirely favorable. As any other company that plans to employ women ultimately must do, CR&L went into the experiment with an open mind. It had no phobias or inhibitions about women workers—no prejudices for

(TURN TO PAGE 104, PLEASE)



ABOVE a world dark with the shadow of war, the great planes thunder on as our flying fighters strike for victory.

At landing fields everywhere on a dozen battle fronts, skilled ground crews work day and night to keep the vital warplanes in top operating condition. There, too, are KEYSTONE TRAILER "Labs" . . . completely outfitted with the vital equipment necessary to test and repair the valuable aircraft instruments upon which the pilots depend when carrying out their missions of deadly destruction.

KEYSTONE is proud to have been selected to engineer and build these mobile instrument laboratory trailers for the United States Air Forces . . . proud to devote their years of experience and proved skill to this important war production job.

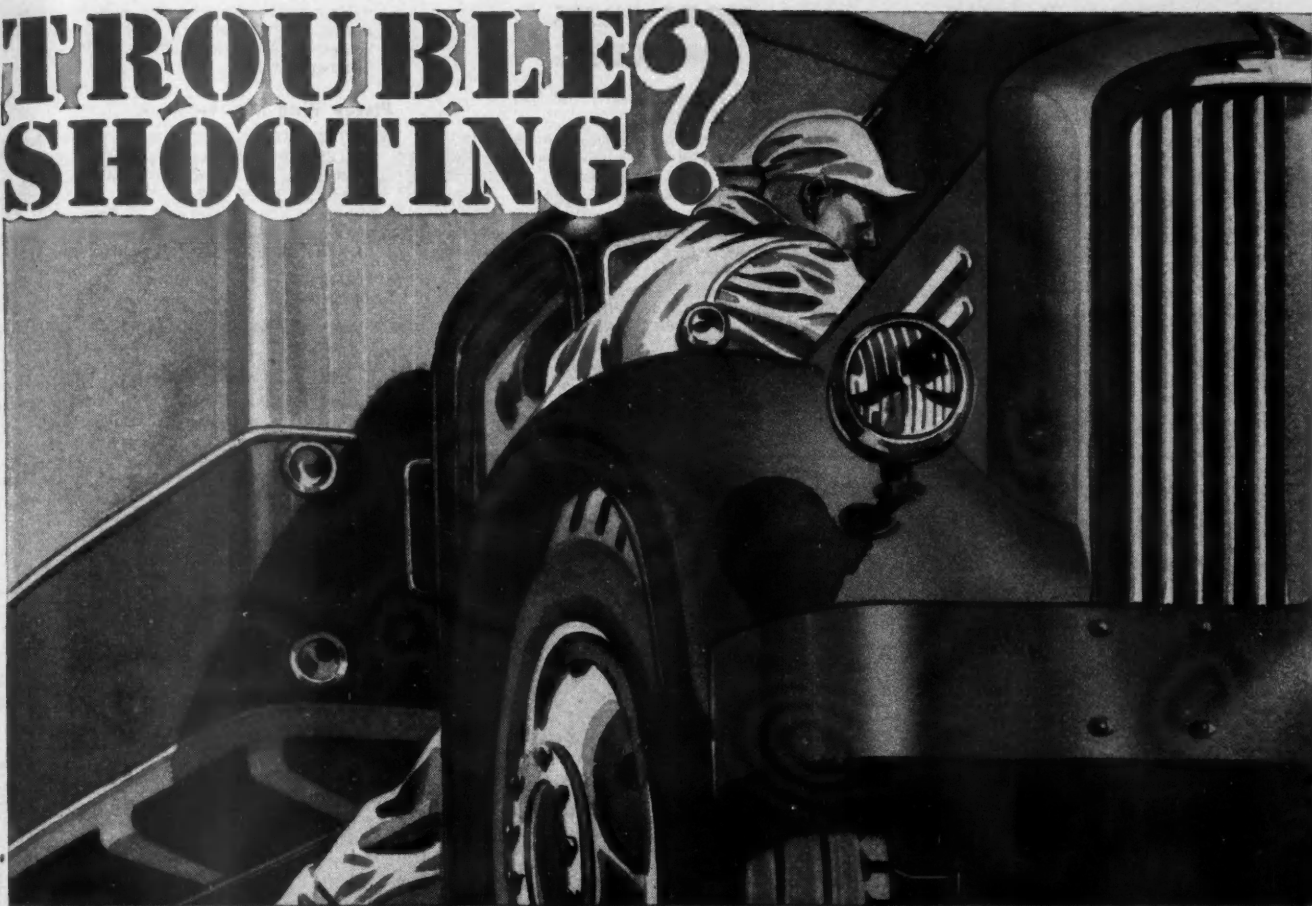


We consider it a privilege and a duty to work 100% for freedom's cause until victory is attained. But we are looking ahead and planning ahead to that brighter tomorrow when we will serve America's great commercial hauling industry. Then will new and improved KEYSTONE CARGO TRAILERS again be "The Trailer That Leads" on the highways of the nation.

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KANSAS CITY, MISSOURI



TROUBLE? SHOOTING?



KILL TROUBLES... BEFORE THEY HAPPEN!

PREVENT damage by cleaning all internal parts of sludge, gum, varnish, and other harmful products of combustion and oxidation.

Clean motors last longer, go further, cause less trouble, reduce maintenance man hours to a minimum.

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THE NATIONAL REFINING COMPANY • CLEVELAND, OHIO

East of Ohio . . . The Globe Refining Company, Cleveland, Ohio

(CONTINUED FROM PAGE 102)

or against them. It knew it was women or else.

The experiment was not a publicity stunt but a deadly in earnest business proposition. CR&L is definitely committed to women employees for the duration, and in view of the success which thus far has attended their experiment in all probability it will be for keeps.

END

(Please resume your reading on P. 56)

MORE FILMS FOR FLEETS

(CONTINUED FROM PAGE 52)

that king pins, steering linkage, generators, starting motors, distributors and other parts must not be overlubricated.)—16 mm. motion; approx. 15 min.; film only; transportation charges; address Louis F. Perry, Graphic Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

THE STORY OF THE OIL FILTER—(Describes the manufacturing procedure in making oil filters for automobiles, trucks, etc.)—16 mm. motion; sound; approx. 30 min.; film only; transportation charges; address A. C. Spark Plug Division, General Motors Corp., Flint, Mich.

THE STORY OF LUBRICATING OIL—(Illustrates by flow diagram, principal steps in refining, after distillation. Included also are testing methods and check-up of performance in actual use.)—16 mm.

motion; approx. 30 min.; film only; transportation charges; address Louis F. Perry, Graphic Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

Piston Ring Maintenance

WARTIME MAINTENANCE OF ESSENTIAL VEHICLES—(Recommended procedure on piston ring installations and related operations for engine re-conditioning.)—35 mm. slidefilm; 45 min.; film only or film with operator and equipment; two-week notice; address W. A. Kirkpatrick, Wilkenning Mfg. Co., 2000 S. 71st St., Philadelphia 42, Pa.

Safety

CARBON MONOXIDE: THE UNSEEN DANGER—(Shows several examples of carbon monoxide victims. Illustrates proper ventilation and safety methods.)—16 mm. motion; film only; transportation charges; address Louis F. Perry, Graphic Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

FOLLOW THE WHITE TRAFFIC MARKER—(Illustrates the important part played by the white traffic markers in the center of the road and by other safety signs designed for preventing accidents.)—16 and 35 mm. motion; approx. 15 min.; film only; transportation charges; address U. S. Bureau of Mines, as above.

FIRST STEPS IN FIRST AID—(Based on Bureau of Mines manual of First Aid Instruction. Shows a series of accidents, consequences of improper treatment and handling of the injured, then covers fully the proper treatment of all kinds of cuts, bruises, broken bones, burns and shock.)—16 mm. motion; sound; 31 min.; film only; transportation charges; address U. S. Bureau of Mines, as above.

THE GLASS CASE—(The important contributions to safety by modern safety glass.)—16 mm. motion; sound; 20 min.; film only; transportation charges; address General Motors Corp., Dept. of Public Relations, 1775 Broadway, New York City, N. Y.

FORMATIONS—(Entertaining film pointing out the cause of many traffic accidents—discourtesy on the road.)—16 and 35 mm.; motion; sound; 9 min.; film only; transportation charges; address General Motors Corp., Dept. of Public Relations, 1775 Broadway, New York City, N. Y.

THE OTHER FELLOW—(Comedian Edgar Kennedy and a Hollywood supporting cast present a powerful safety message presented in a highly interesting, delightfully amusing and timely dramatic manner.)—16 and 35 mm.; motion; sound; 9 min.; film only; transportation charges; address General Motors Corp., Dept. of Public Relations, 1775 Broadway, New York City, N. Y.

THE TIP OFF—(An interesting film pointing out that one way to avoid accidents is to be on the alert for "tip offs" before they happen; valuable aid in making split second decisions in an emergency.)—16 and 35 mm.; motion; sound; 9 min.; film only; transportation charges; address General Motors Corp., Dept. of Public Relations, 1775 Broadway, New York City, N. Y.

WE DRIVERS—(One of the most effective pictures on traffic safety ever produced. Reckless Rudolph and Sensible Sam, two animated characters, pop in and out of scenes—one coaxes the driver to take risks, the other cautions him to exercise care. Hints, including safest driving on ice and snow, in fog and at night.)—16 and 35 mm.; motion; silent or sound; 35 mm.; part technicolor; 10 min.; film only; transportation charges; address General Motors Corp., Dept. of Public Relations, 1775 Broadway, New York City, N. Y.

Springs

SPRINGS—(Demonstrates the principle upon which all springs operate and shows their manufacture.)—16 mm. motion; 13 min.; film only; service charges as outlined for British war films; address British Information Services, Film Division, 30 Rockefeller Plaza, New York, N. Y.

Tools and Equipment

USE AND CARE OF HAND TOOLS—(A series of six films prepared under U. S. Army Ordnance supervision that covers practically all types of hand tools, showing the correct methods for better, faster and safer work, including avoiding abuse.)—16 mm. motion; sound; 11 to 20 min., depending upon subject; for charges write F. W. Kirwin, Plomb Tool Co., Los Angeles, Cal.

THE METAL WORKING LATHE—(Part 1 of two films on How to Run a Lathe, and adapted from the book of the same name. This film aims to

(TURN TO PAGE 106, PLEASE)



Supplying YOUR needs is one of FEL-PRO's war jobs!

Fel-Pro's enlarged plants are operating at record capacity to help meet the tremendous industrial and military demands for sealing materials!

Our war job is three-fold. To meet military requirements. To meet industrial requirements. To meet your requirements.

The vital automotive transportation which America is depending upon you to maintain must have gaskets and sealing materials. You have a war job to do just as important as the men in the war production plant. So as long as consistent with military needs, Fel-Pro will make every effort to see that you are supplied with the necessary gaskets. This is our pledge to you.



Felt Products Mfg. Co.

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- ★ *Keep 'em Rolling* ★
- ★ *with FEL-PRO* ★
- ★ **GASKETS**—for every automotive application. ★
- ★ **PACKING**—for water pumps, bearing seals, etc. ★
- ★ **GREASE RETAINERS**—in sizes and types to fit all cars. ★
- ★ **TAPE**—Woven Asbestos Lining Tape — Twisted Asbestos Wicking. ★
- ★ **MANY OTHER** Automotive Sealing Products. ★
- ★ *Most of these products are available packaged in boxes or sets.* ★
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"Take more punishment ...cost us less"

says **WILLIAM S. BERNARD**
Asst. Supt. Transportation
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Two revolutionary developments give the better battery performance that has won the approval of the Massachusetts Wharf Coal Company. "Activite," a remarkable new kind of power-producing material, is literally packed with extra power. And Auto-Lite Fibre-Glass prevents "shedding," the major cause of storage battery failure.

In tests made according to S. A. E. standards, Auto-Lite batteries made with "Activite" and Fibre-Glass, showed double the life of ordinary batteries without these two features. Put this better battery in your fleet. Ask your dealer, or write direct to

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Manufacturing Plants at: NIAGARA FALLS • INDIANAPOLIS • ATLANTA • OAKLAND • OKLAHOMA CITY • TORONTO

Auto-Lite Batteries have proved to us time and time again that they can take more punishment than any battery we ever used.

William S. Bernard.
William S. Bernard.
Asst. Supt. Transportation
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AUTO-LITE BATTERIES

ENGINEERED AS A BALANCED
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IN ITS 26 GREAT MANUFACTURING DIVISIONS, AUTO-LITE IS PRODUCING A LONG LIST OF ITEMS FOR AMERICA'S ARMED FORCES ON LAND, SEA AND IN THE AIR

MORE FILMS FOR FLEETS

(CONTINUED FROM PAGE 104)

acquaint beginners with lathe parts, nomenclature, purpose and operation.)—16 mm. motion; sound; color; 20 min.; film only; transportation charges; address South Bend Lathe Works, South Bend, Ind.

PLAIN TURNING—(Part 2 of two films on How to Run a Lathe, and adapted from the book of the same name. This film illustrates all operations involved in the machining of a shaft held between the lathe centers. Shows proper use of calipers, micrometers, selection and use of tools, etc.)—16 mm. motion; sound; color; 20 min.; film only; transportation charges; address South Bend Lathe Works, South Bend, Ind.

Valves

VALVES: THEIR MANUFACTURE AND USES—(Gives close-up views and cross sections of angle, globe, gate and check valves. Shows close-up views of an automobile engine with cross sections of poppet, butterfly, check and gate valves.)—16 and 35 mm. motion; approx. 30 min.; film only; transportation charges; address Louis F. Berry, Graphic Service Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

Welding

MODERN METALWORKING WITH THE OXY-ACETYLENE FLAME—(Covers basic principles, animated photography explains construction and operation of oxyacetylene equipment; shows use of different welding heads and the technique of cutting scrap steel, repairing fenders, tensile tests, etc.)—16 and 35 mm. motion; approx. 30 min.; transportation charges; address Louis F. Perry, Graphic

Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

Wheel Alignment

WHEEL ALIGNMENT—(Covers correction of caster, camber and toe-in of Ford front end.)—35 mm. slide film; sound; 20 min.; film only; address B. R. Donaldson, Ford Motor Co., Dearborn, Mich.

General

HARVEST—(The story of Henry Ford as a young engineer. Impressive photography.)—16 mm. motion; film only; transportation charges; address Ford Motor Co., Department of Photography, 3674 Schaefer Rd., Dearborn, Mich.

MAKING A V-TYPE ENGINE—(Shows complete process of manufacture from iron ore to honing cylinder blocks to an accuracy of three-millionths of an inch and to assembly in an automobile chassis.)—16 and 35 mm. motion; approx. 30 min.; film only; transportation charges; address Louis F. Perry, Graphic Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

WHAT MAKES A GAS ENGINE RUN—(Illustrates the principles of the four-stroke cycle gas engine.)—35 mm. slidefilm; film only; transportation charges; address International Harvester Co., 180 N. Michigan Ave., Chicago, Ill.

THE POWER WITHIN—A STORY OF THE INTERNAL COMBUSTION ENGINE—(Shows early experiments; animated drawings of the construction, function and operation of the engine; power units; brakes; and steering gear of an automobile.)—16 and 35 mm. motion silent and 16 mm. sound; approx. 30 min. silent and 15 min. sound; film only; transportation charges; address Louis F. Perry, Graphic Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

CAUGHT NAPPING—(The fascinating story behind the production of road maps from the field to the finished product.)—16 and 35 mm. motion; sound; 10 min.; film only; transportation charges; address General Motors Corp., Department of Public Relations, 1775 Broadway, New York, N. Y.

THE STORY OF GASOLINE—(Shows gasoline manufacture from the crude oil stage to cracking. Includes tests, storage and transportation.)—16 mm. motion; approx. 30 min.; film only; transportation charges; address Louis F. Perry, Graphic Services Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh, Pa.

ABRASIVES—(Covers the manufacture of abrasives, grinding wheels, sharpening stones, sandpaper, etc. Demonstrates accurate grinding of crankshafts, camshafts, engine blocks, shop tools and automobile bodies.)—16 mm. motion; silent and sound; approx. 30 min.; film only; transportation charges; address U. S. Bureau of Mines, as above.

FRONTIERS OF THE FUTURE—(Shows how industrial research leads to new products—gears from plastics, rubber from coal, limestone, salt and water, etc.)—15 and 35 mm. motion; sound; 11 min.; film only; transportation charges; address General Motors Corp., Department of Public Relations, 1775 Broadway, New York, N. Y.

LEST WE FORGET—(Review of automobile design and manufacture—horseless carriages, goggles and dusters to modern cars.)—16 and 35 mm. motion; sound; 10 min.; film only; transportation charges; address General Motors Corp., as above.

A NEW WORLD THROUGH CHEMISTRY—(Chemistry's contribution to the development of products once provided by nature, including synthetic rubber.)—16 mm. motion; sound; color; 20 min.; film only; transportation charges; address General Motors Corp., as above.

WAR FILMS

United States

A number of interesting wartime motion picture releases are available to fleet operators for group showings. A few of these are listed below. These are Office of War Information films distributed through 191 different organizations throughout the United States. No rental charge is made, although the various distributors may make a nominal service charge not exceeding \$.50 for the first film and \$.25 for each additional film included in a single shipment.

All films are 16 mm. sound productions. Only the film is supplied. Many film distributors, however, will be able to arrange for the rental of projection equipment. Write to Office of War Information, Bureau of Motion Pictures, Washington, D. C., for the address of the OWI film distributor nearest you.

BOMBER—Shows the manufacture, speed and power of the B-26 Army bomber. Commentary written

(TURN TO PAGE 108, PLEASE)

WAR TIME Wear and Tear PROVE DEPENDABILITY OF KINGHAM TRAILERS

WAR time wear and tear—double duty at double quick time—has tested the strength and dependability of rugged, light-weight Kingham-Universal trailers. All reports received from operators show that Kingham Trailers have proven their dependability in this war-time emergency.

On the battle front, as well as on the home front, dependable Kingham-Universal Trailers are delivering capacity loads of essential war materials on time with unexcelled efficiency and economy, traversing some of the roughest roads and terrain known.

A limited number of Kingham-Universal Trailers are immediately available for essential war hauling—Write us today!

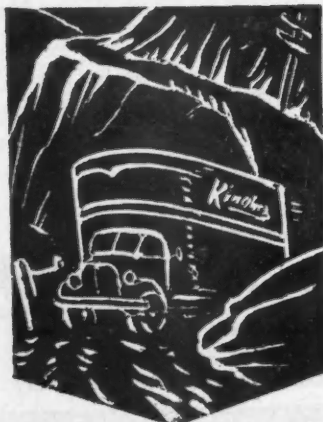
NATIONAL SALES—*Kingham*—NATIONAL SERVICE

"A Load Behind is a Trip Ahead"

KINGHAM TRAILER COMPANY

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Rebuild them to last!

Automotive transportation—civilian as well as military—is vital to the successful prosecution of the war. Our industry must fight transportation failure with every resource. Today more than ever it is important to use only parts of highest quality. Only the very best will prevent costly breakdowns and avoid the wasting of irreplaceable man-hours in your shop.

Use Genuine Ring-True bearings—long the choice of engineers as standard equipment in leading makes of cars, trucks, busses, heavy-duty and air-craft engines. Specify C & B precision-built rebabbitted connecting rods and reconditioned rod forgings.

Ask your jobber for these proven products to help you "rebuild them to last."

CLAWSON & BALS, Inc., Chicago

Factory Stocks in Principal Cities

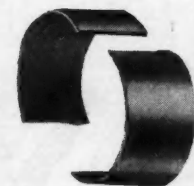
Genuine



"Precision Lined" Type
Thin babbit lining only .002" to .005" thick. Increases bearing life 90%.



"Aviation" Type
Copper alloy. Resists high bearing pressures of heavy-duty engines.



"Acid Proof" Type
Exclusive with Ring-True. Eliminates danger of failure due to corrosion.



Reconditioned Forgings
Complete line. Accurately machined and aligned. Rigidly inspected.



Rebabbitted Rods
The pioneer rod exchange—millions of rods ready for instant service.

MORE FILMS FOR FLEETS

(CONTINUED FROM PAGE 106)

especially by Carl Sandburg. Running time: 10 min.

DIVIDE AND CONQUER—Depicts the Nazis at work deliberately spreading hate and fear, distrust and confusion among the French people. A sober and dramatic reminder that this war is being fought on civilian as well as military fronts. Produced by Warner Brothers. Running time: 14 min.

KEEPING FIT—Demonstration of the wartime effects of sickness—absences, idle production lines, fewer planes, etc.—and an explanation of five simple rules of health. Produced by Universal Pictures. Running time: 10 min.

A LETTER FROM BATAAN—A glimpse of the con-

ditions under which American soldiers lived and died on Bataan, and a dramatic plea for civilians at home to conserve rubber, save fats, and use food carefully, so that other American soldiers will be properly equipped. Produced by Paramount Studios. Running time: 14 min.

PARATROOPS—A terse and factual account of the training given our Soldiers of the Sky—jumping, falling, guiding the 'chute, landing, coming up fighting and, with special companies, skiing for winter warfare. Running time: 9 min.

SAFEGUARDING MILITARY INFORMATION—Dramatic exposition of the results of careless talk—a ship torpedoed, a train wrecked. Produced by the Signal Corps of the U. S. Army in cooperation with the Motion Picture Academy of Arts and Sciences. Running time: 10 min.

THE SPIRIT OF '43—A Walt Disney Production in Technicolor. Donald Duck is torn between two conflicting impulses—to spend or to save. He makes his decision, steps up to the income-tax window and pays his taxes "to bury the Axis."

TANKS—Manufacture and performance of the M-3 Army tank, including tests and shipment overseas. Narrated by Orson Welles. Running time: 10 min.

TROOP TRAIN—Showing the moving of the 201st Armored Division—tanks, trucks, half tracks, motorcycles, jeeps, guns and men—across the country from "X" to "Y." Running time: 11 min.

Great Britain

The British Ministry of Information also is making available many interesting and dramatic war films for group showing among fleets. These are films about Great Britain and the United Nations which were released first in Britain and now in the United States.

All films listed are sound pictures, loaned without projection equipment on a C.O.D. service charge basis of \$.50 per day for the first reel and \$.25 for each additional reel in the same shipment. Extra days up to seven, \$.10 per day per shipment. Longer loans by special arrangement. At least two weeks' notice is required for all reservations. It is desirable to submit alternative titles, as some of the films may not be available on the dates named. Write British Information Services, Film Division, 30 Rockefeller Plaza, New York, N. Y.

ACK ACK—The story of an anti-aircraft gunnery unit as told by an Ack Ack gunner. The training, organization and routine duties of an Ack Ack crew. Running time: 9 min.

MIDDLE EAST—A map-and-diagram film showing the Middle-Eastern war zone, from Libya to Iran, explaining how this era is a vital and strategic wall dividing Germany and Japan, as long as it is held by the United Nations. Running time: 8 min.

FIGHTER PILOT—An account of the work of a typical British air fighter pilot waiting call for duty, in actual combat, and returning to his base. Running time: 8 min.

TARGET FOR TONIGHT—An intensely dramatic film of the preparations for and attack by an R.A.F. bomber squadron on an enemy objective, and their hair-breadth return to England. This production won the Academy Award as being the best documentary film of 1941. Running time: 48 min.

AMERICA MOVES UP—A report by Bob Trout, CBS Commentator in London, on the many ways in which the U. S. is moving materials and men into action. Running time: 13 min.

THREE IN A SHELL HOLE—A dramatic incident involving a Soviet Red Cross girl, a wounded Russian soldier and a German soldier, all buried in the same shell hole. Running time: 10 min.

WOMEN AT WAR—An account of the many jobs women are doing in wartime Britain, introduced by Ambassador Winant. Running time: 11 min.

ALL HANDS—An example of the possible consequences of a casual remark in a cafe by a sailor to his girl as to when his ship is due to leave. The film shows how spies pass the word on and what happens to the ship and crew. Running time: 12 min.

CONTROL ROOM—Through diagrams and detailed pictures, the organization and operation of Civilian Defense during a heavy raid on a large city is depicted in this production. An excellent example of the coordination of all public services in an emergency. Running time: 23 min.

Other War Films

AMERICA CAN GIVE IT—(Everything that we are fighting for, working for and sacrificing for is exemplified in this film. Actor Walter Huston and Foreign Correspondent Quentin Reynolds point up the story in a most inspiring and dramatic manner. Radio Commentator Lowell Thomas ties in the story with data showing the results on the production front.)—16 and 35 mm. motion; sound; 40 min.; film only; address General Motors Corp., Department of Public Relations, 1775 Broadway, New York, N. Y.

ON TO JUPITER—(Industry's contribution to the war effort—science and research tuned to the times. Looks into the future of transportation, aviation, etc.)—16 and 35 mm.; motion; sound; 20 min.; film only; transportation charges; address General Motors Corp., as above.

VICTORY IS OUR BUSINESS—(War production story. Shows construction of military trucks, diesel engines, etc.)—16 and 35 mm.; motion; sound; 10 min.; film only; transportation charges; address General Motors Corp., as above.

OTHER FILMS

The following list of films will be of interest to fleet operators who would like to purchase certain technical or safety instruction courses to build up (TURN TO PAGE 110, PLEASE)

SPEEDING DOUBLES

the Wear and Tear on Tires!




**Your Trucks, too,
Will Do Less Speeding**

when the drivers realize they can't
"make up" delays by "giving her
the gas" and getting in on time

THAT'S how it works. The Servis Recorder takes away the motive for speeding—removes the cause, so to speak.

SAVES ON TIRES

Of course you understand that. The point is, you can't afford to be easy-going about it any more. A tire ruined by speeding—well, that's just too bad!

ALSO SAVES ON GAS

Yes, speeding wastes a lot of gas, and it also wastes the very metal of the truck itself!

Well, the whole story is told in one circular: "Speeding and Accidents." Send for it today.

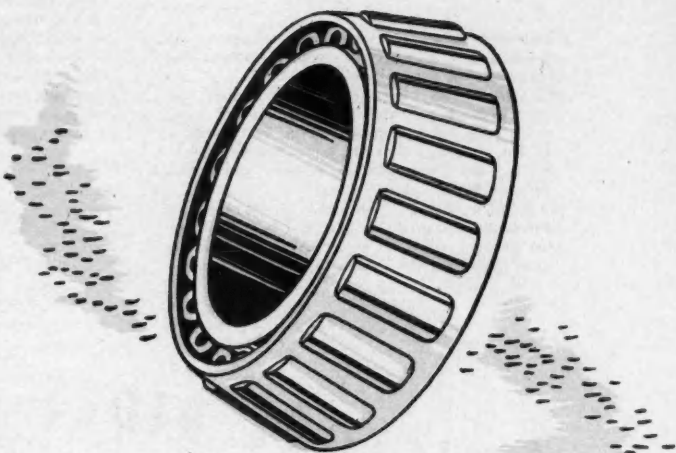
THE SERVICE RECORDER CO.
1375 EUCLID AVENUE CLEVELAND, OHIO

The Servis Recorder

Helps Prevent Speeding and Accidents



You can buy a new shirt in 10 minutes



...but it may take weeks to replace a ruined wheel bearing

The answer is Preventive Maintenance now with Shell Automotive Lubricants



In the horse and buggy days the "wheel that squeaked the loudest got the most grease." Waiting today for a wheel to squeak before lubricating is dangerous. A noisy wheel usually means a cracked or chewed-up bearing... trouble ahead... "time out" for

repairs... possibly a long wait for the delivery of a new bearing.

Under present extreme operating conditions, more than the usual care should be taken to make sure your wheel bearings are properly lubricated. This means that periodic check-ups should be made more frequently than the usual 5,000 to 10,000 miles. They may take time, yes. But the few minutes they do take will be well spent when you compare them with costly delays such check-ups can save you.

Don't wait for trouble to remind you that it's time to lubricate. Call in the Shell man now. Let him help you plan your Preventive Maintenance.



SHELL AUTOMOTIVE LUBRICANTS

MORE FILMS FOR FLEETS

(CONTINUED FROM PAGE 108)

a permanent library for subsequent showings to new employees or to procure certain special educational films not available on a free loan basis.

THE CHANCE TO LOSE—(Deals with reckless driving. Explains why traffic accidents are apt to be worse under good conditions than under bad.)—16 mm. motion; approx. 15 min.; film only; rental \$3 per day; transportation charges; address The National Safety Council, as above.

THE TRUCK AND THE DRIVER—(Shows why truck drivers are considered the best handlers of automotive vehicles. Stresses the importance of checking such items as tires, exhausts, windshield wipers,

etc. Covers all common hazards of urban truck driving as well as highway operation.)—16 mm. motion; sound; approx. 15 min.; film only; rental \$3 per day; transportation charges; address The National Safety Council, as above.

The Jam Handy Organization has produced many training films dealing with every aspect of automotive mechanics, shop practice, safe driving, etc. These films are not loaned or rented; they must be purchased outright. Prices vary according to the subject and length and type of film. For list of descriptive titles and prices write F. E. Gymer, The Jam Handy Organization, 2900 E. Grand Boulevard, Detroit, Mich.

END

(Please resume your reading on P. 53)

SOMETHING NEW IN PM PAPERWORK

(CONTINUED FROM PAGE 56)

a working schedule for 1000-mile, 5000-mile and 15,000-mile periods, and two wall charts providing a Daily Operating Record and a PM Control Record. These schedules and charts are shown in the accompanying illustrations.

One other record is required to put the program into operation. This is a driver's daily report, supplying such basic data as daily mileage, gasoline and oil consumption, etc. While Tide Water has devised a sample Driver's Daily Report, this form is not made available in quantity as part of the plan. This is the only form the fleet operator is required to supply himself.

The program starts out by taking each vehicle when available and putting it through Schedule C—the 15,000-mile check-up. This provides a thorough inspection from bumper to bumper and starts the vehicle off in a sound condition to deliver trouble-free service for many miles. The mechanic does not "look for trouble" aimlessly, however, as the nature and extent of each operation is clearly specified. After the operations on this schedule have been completed and checked off by the mechanic, and the vehicle inspected, the odometer reading is noted in the proper space on Schedule C and on the PM Control Record, which is one of the wall charts.

Up to this point the fleet operator has had a major PM inspection performed and a record of what was done with a minimum amount of paper work—a few pencil checks by the mechanic and two notations on convenient forms by the superintendent or other person detailed to operate the program.

Having started the program, the next step is to set up some automatic and convenient reminder as to when the next inspection period is due and just what schedule should be followed. This is accomplished simply by calculating the mileage for Schedule A, the next step, which in this instance merely means adding 1000 to the mileage at Schedule C and marking it in the proper space at the bottom of the Daily Operating Record. Thus the maintenance man can

(TURN TO PAGE 112, PLEASE)



Home front, battlefield . . . rubber tires are helping our nation achieve early, lasting victory. On both fronts, Cooper tires are performing with usual rugged dependability—tribute to manufacturing know-how acquired through years of continuing research. THE COOPER CORPORATION, Findlay, Ohio.

Cooper

"THE NAME TO REMEMBER
WHEN YOU BUY TRUCK TIRES"





Jumpin' Jeepers!



Here's sound engineering and precision manufacturing in action—the kind American industry is turning out in ever-increasing quantities to help speed the day of Victory!

We're proud that Carter carbureters, as standard equipment on jeeps, are proving that they can take it.

CARTER CARBURETOR CORPORATION—St. Louis, Missouri

Division of American Car and Foundry Company

SOMETHING NEW IN PM PAPERWORK

(CONTINUED FROM PAGE 110)

tell at a glance, when each vehicle checks in at night, whether the mileage accumulated for that day has reached the point indicated at the bottom of the sheet as being the next inspection period.

An examination of this Daily Operating Record form, illustrated at the beginning of this article, shows a

working sample of scheduling a vehicle for the various inspections. The daily mileages, as taken from the drivers' daily reports, are noted in the column at the left. Five days after the initial inspection the vehicle's mileage has reached—in fact slightly exceeded—the next inspection point. At this time, the shop gets the Schedule A card for that vehicle and the system functions smoothly with the shop knowing exactly what has to be done, the inspection spaced wide enough apart to allow major repairs

in the meantime, and the clerical detail reduced to a minimum.

This PM program is flexible enough to permit certain variations to fit a given operation. For example, Schedules A, B and C are arranged for 1000, 5000 and 15,000-mile periods. However, if a fleet finds that it would be more convenient to set Schedule A for 1200 miles, instead of 1000, the change may be made without affecting the efficiency or efficacy of the program. Of course, such alterations must be adjusted for all schedules. For example, Schedule A would operate at 1200-mile intervals. Schedule B at 6000 miles and Schedule C at 18,000 miles after the first inspection.

An indication of the thoroughness of the schedules can be obtained from the number of operations requested on each schedule. There are 26 operations on Schedule A, 47 on Schedule B and 53 on Schedule C.

Close study of the operations listed on the various schedules will reveal that Schedule A, the one most frequently employed, requires the services of the least skilled men in the shop. Thus the valuable time of the first-class mechanic is not diverted from major work to routine service. When trouble is uncovered, repairs can be made immediately, or scheduled for some more convenient time in the near future. This can be handled as on the forms illustrated. There, it will be noticed, the mechanic simply encircled the operation and explained the work required on the reverse side of the form. This presents a good example of the fact that preventive maintenance need not ever interfere with important jobs in process in the shop, yet trouble can be uncovered before it reaches the costly failure stage.

The schedule forms are 8½ x 11 in. in size, and printed on heavy, colored bristol card stock. The different schedules are easily distinguishable, not only by the large letters A, B and C but by colors, which differ for each schedule. The wall charts are 16½ x 28 in., and printed on tough, india card stock.

The cost of securing the necessary forms to operate a PM program is but a small item. The Veedol PM Plan is based on a flat rate of \$0.18 per truck. For this sum the fleet operator will be furnished with all necessary forms, excluding the Drivers Daily Report.

(TURN TO PAGE 114. PLEASE)



**KEEP EVERY FUEL PUMP
WORKING AT TOP EFFICIENCY**

**SEND US YOUR AILING
PUMPS AND RECEIVE
IN RETURN . . .**

AIRTEX

**Guaranteed FUEL PUMPS
WITH THE 50,000 MILE GUARANTEED DIAPHRAGM**

WE ship you a perfect replacement for every pump you send us — a guaranteed AIRTEX Exchange Pump of the same type, that will service the same passenger car and truck models — at a low exchange price.

Remember — Your profits climb with the AIRTEX Line.

A FUEL PUMP REQUIRES

- 1 MINOR REPAIRS —** Fix it with an AIRTEX Diaphragm Kit.
- 2 EMERGENCY REPAIRS —** Keep it pumping with an AIRTEX Repair Kit.
- 3 MAJOR REPAIRS, OVERHAULING or RECONDITIONING —** Send it to us and receive in its place an AIRTEX Exchange Fuel Pump with the 50,000 Mile Guaranteed Diaphragm.

AIRTEX AUTOMOTIVE CORPORATION FAIRFIELD, ILL.



You've Served on a SPLIT-SECOND Front

SINCE THE WAR STARTED!

WHEN you hear "second front" mentioned, remember you've served on a **split-second** front since Pearl Harbor. For those trucks of yours have to get the supplies through — and get them through on time! Permitem Parts help you to keep close schedules — reduce costly breakdowns. Long outstanding both as replacement parts and as original

equipment, they are now adding a military reputation to a fine commercial record. Easily installed, always reliable, they will help keep your fleet moving at lowered operating cost.

War orders now take much of our output. But because essential transportation must be kept rolling, you can depend upon your Permitem Jobber for those Permitem Parts you must have.

ALUMINUM INDUSTRIES, INC., CINCINNATI, OHIO

There's a Permitem Jobber Near You

PERMITEM PARTS

ALUMINUM ALLOY
PISTONS
SEMI-STEEL
PISTONS

PISTON PINS
VALVES
VALVE GUIDES
VALVE STEM KEYS

VALVE SPRINGS
BOLTS
BOLT SETS
TIE-ROD ENDS



SPRING SHACKLES
BUSHINGS
SEAL-PACK
WATER PUMPS

WATER PUMP PARTS
WATER PUMP
REPAIR KITS
MUFFLERS AND PIPES

CYLINDER
SLEEVES
WET SLEEVE
ASSEMBLIES

(CONTINUED FROM PAGE 112)

to operate the plan for one year, regardless of yearly mileage.

Fleet operators who are interested in the Veedol PM Plan and would like to have complete details should get in touch with Tide Water Associated Oil Co., 17 Battery Place, New York City, N. Y.

END

(Please resume your reading on P. 58)

SHOP FORMS FIGHT ROAD FAILURES

(CONTINUED FROM PAGE 51)

nary overhaul we install an expander type ring, sometimes using two oil rings. This depends a great deal on the type of truck we are working on. If the truck is to be put back into general use we take more pains with it than one which may be kept as a spare or a stand-by truck. Valves are faced and seats are ground, then

the valves are ground in. In severe work we sometimes increase the exhaust valve clearance .002 inch. In very severe cases we resort to the use of stellite valves and increase the clearance 50 per cent. We use the Repair History Card, shown in Fig. 2, to record dates and mileages at which these complete overhauls are made. This is the master card and tells us at a glance what major work has been done on the truck.

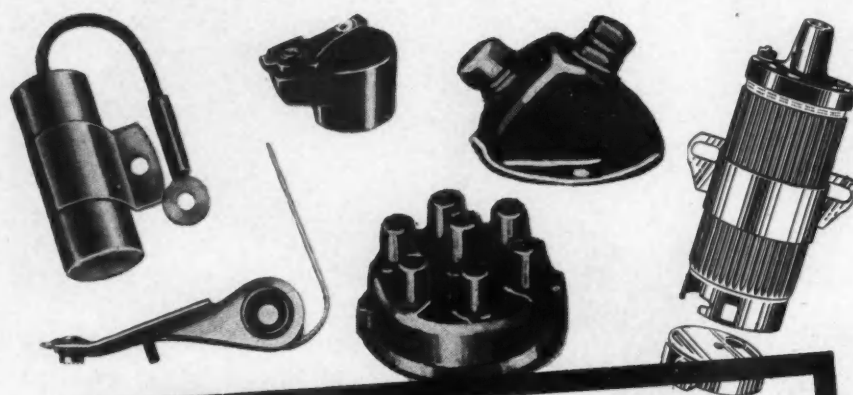
We use thermostats set at 180 deg. in all trucks. On those trucks which are on short runs and make long stops we use bi-pass thermostats and circulate the water in the block only, until it has reached 180 deg. A few trucks come equipped with this device but on the others we have made our own installation. This has been a big factor in eliminating sludge in the motors.

Reference to our 3000-mile inspection sheet, Fig. 3, will give you an idea what we look for here. Spark plugs are cleaned and gaps reset. The distributor is checked on a synchrograph and the cam angle set at this time. The timing is set by an electric tachometer. Factory ignition timing is disregarded in making these settings. The reason for this is the difference in gasoline used. We use an exhaust analyzer to set our carburetors. Generators and regulators are checked and set by an A V R unit.

Most of these inspections are made at night. A visible index of all trucks is maintained and when any one truck has reached the 3000-mile mark it is flagged on the index for inspection. The mechanic can see at a glance which piece of equipment is due for the check thus saving time in hunting for something to work on.

We have no definite mileage schedule to control the relining and adjusting of brakes. This, of course, varies a great deal depending on the type of route the truck is on and also the driver. Some drivers use the brake much more than others, wearing the linings down faster. We have three classifications on our brake record card as indicated by Fig. 4. Date and mileage are recorded when they are relined. Experience has taught us that we should inspect the condition of the linings after about 5000 to 8000 miles of use. We then record our findings in

(TURN TO PAGE 116, PLEASE)



**Not MORE Items to Sell...
But ONE COMPLETE QUALITY
LINE OF IGNITION PARTS**

**that America's Leading Mechanics
can install in Trucks, Buses and Passenger Cars!**

P. & D. manufactures only one complete quality line of ignition replacement parts for all three types — trucks — buses — passenger cars. These parts are designed for heavy duty service and enable America's leading mechanics to maintain their business volume and help in the critical materials conservation program, because:

- 1 They minimize inventory investment.
- 2 Mechanics need use only one quality line for all three types of vehicles.
- 3 Customers are assured of peak performance and maximum life from genuine P. & D. Parts.

Send for our complete replacement parts catalog, today.

P. & D. MANUFACTURING COMPANY, Inc.

STARTING
LIGHTING

LONG ISLAND CITY
NEW YORK

IGNITION

REPLACEMENT PARTS

P. & D. Manufactures ONE complete quality line. Only the finest materials and workmanship obtainable are employed.

YOU CAN NOT PURCHASE ANY FINER QUALITY

ONE LOOK

Through a Microscope

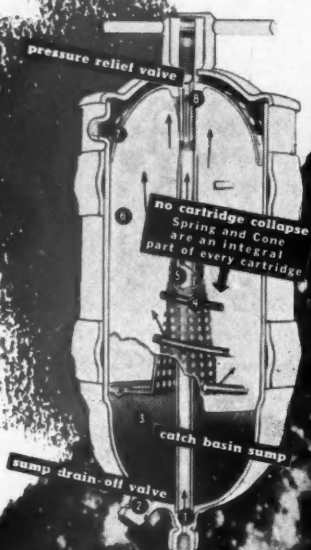
TELLS WHY!

This is deposit taken from the sump of a neglected DeLuxe Oil Filter! Microscopic examination of it dramatically reveals the value of the DeLuxe method of oil cleansing and tells why it is so important not to neglect cartridge replacement!

Neglect allowed this dirt and sludge to accumulate in the sump. When cartridges are replaced at the proper time, such sludge cannot accumulate in a DeLuxe Filter! Reason: The DeLuxe Filter

cleanses the oil of asphaltenes and other materials *before they can form* into sludge.

Yet, note this well! Even in neglect the cartridge is protected from clogging by the DeLuxe sump which collects the sludge! The catch-basin sump is one of the eight DeLuxe features that make it possible for DeLuxe to more than strain or filter . . . but to *actually cleanse* oil. For complete details on them all, write for your free copy of FILTER FACTS. Address DeLuxe Products Corp., 1406 Lake Street, La Porte, Indiana. In Canada, 364 Richmond Street, Toronto.



DELUXE

Oil Filter
ACTUALLY CLEANSES OIL



This is the interior of Knudsen Creamery's body shop where bodies are built and repaired



THE HYGRADE LINE

Replacement Parts
for Carburetors
Fuel Pumps & Shocks.
Speedometer Shaft-
ing & Casings.
Fuel Lines &
Fittings.

FOR CARBURETORS



FOR
FUEL
PUMPS

TODAY'S drastic fuel rationing has made it clear to motorists that they must cut out gas waste. One drop today is as valuable as one gallon yesterday. It's the drops saved that give them those coveted *Extra Miles*.

Hygrade Contain-All Kits fit into this picture like a hand in a glove. They give the repairman the necessary material for completely reconditioning Carburetors and Fuel Pumps. And the instant these two units start to function normally again every drop of gas in the tank must do its full share of work.

Motorists listen eagerly these days to suggestions for saving gas. Explain to them why faulty Carburetors and Fuel Pumps rob them of mileage—and how little it costs to regain this lost mileage by a quick overhaul job. Welcome miles for them! Welcome profits for you!

HYGRADE PRODUCTS CO., INC.

35-35 Thirty-fifth Street,
Long Island City, N. Y.

HYGRADE

Hygrade Line
AUTOMOTIVE
PRODUCTS

Don't BUY Labor — SELL it!

SHOP FORMS FIGHT ROAD FAILURES

(CONTINUED FROM PAGE 114)

either the "Good" or "Fair" columns. If they are in only fair condition we mark these up for a reline in the near future. Wheel bearings are cleaned and repacked at this time also.

From the first we put into effect a very rigid tire maintenance plan. We have branded all of our tires and an individual record is kept on the history of each tire (See Fig. 5). We can refer to this record by the brand number. We also keep the cross record as shown in Fig. 6. On this card are listed the brand numbers of the tires installed on each truck. Thus we can at any time find out just what tires are on any particular truck. Likewise we can refer to the history of any one of these tires in the brand file.

We were very fortunate to have had in operation a thorough tire maintenance program when the ODT conservation program went into effect. Practically the entire time of two of our men is spent on this work. One man makes a daily inflation check, watches carefully to replace any missing valve caps, installs new valve insides where an air loss is indicated and also picks out glass, nails and other foreign objects.

This is most important in our operation since there is a great deal of broken glass in our driveways and parking lots where we must drive our trucks in the loading, unloading and servicing operations.

We are guided pretty closely by the manufacturers specifications on tire inflation. In a few cases we may allow an extra 5 lb. of air but no more. This would be only to compensate for an extra heavy load.

Our other service man makes the wheel alignment and tire matching check. We are most particular about this phase of tire maintenance. He also watches the tires to see that they are removed for recapping at the proper time. We usually recap just before the breaker strip becomes visible. We have been averaging about 30,000 miles on new tires before recapping. We use recaps extensively and get very good mileage, averaging 25,000 miles per cap. We usually get two recaps on each tire (TURN TO PAGE 118, PLEASE)

*American
Brakeblok*

BROWN LIPE

Belden

*Allied
PRECISION*

**MONMOUTH
PRODUCTS**

UNITED

DETROIT

*Allied
RAYMOND*

Spicer

PURITAN

RARITAN

DOUBLE
DIAMOND

DITTMER

**Buffalo
MUFFLER**

*Allied
WISCONSIN*

MARTIN-SENOUR

FEDERAL

TRICO

BALKAMP

ECHLIN

New Britain

*Allied
A.P.C.*

STANDARD

GRAPHIC

CELORON

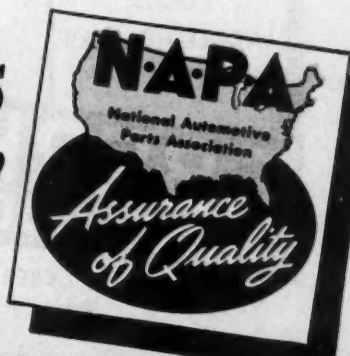
DUCKWORTH



From more than 1800 jobbers you can get prompt service on more than 50 essential and nationally known lines for all cars and trucks. NAPA jobbers, warehouses and manufacturers work together as a team for the common purpose of getting parts from the point-of-manufacture to point-of-use in the shortest possible time. Master stocks in 38 distributing centers make parts readily available to every NAPA jobber. Quality is doubly assured by the maker's reputation and the NAPA Seal.

**YOUR N·A·P·A JOBBER IS
A GOOD MAN TO KNOW!**

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT, MICHIGAN



SHOP FORMS FIGHT ROAD FAILURES

(CONTINUED FROM PAGE 116)

body and in a very few cases three; however, we do not feel that the tire body is too dependable after the second recap.

In our loading and unloading operations we have a number of curbs against which the tires may be scraped unless the drivers are careful. In the past many of our tires were prematurely put out of service

because the complete sidewall would be scraped down through two or three plys. We overcome this problem to a great degree by painting the curbs white which shows up on the tire sidewall quite plainly when scraped. When this is noticed the drivers are immediately cautioned. Periodically the tires are treated with a black tire preservative which covers the paint-rubbed spots. In this way we can also discover if the driver out on his route is careless about scraping the curbs.

We maintain quite a large amount of repair parts in our stockroom. As these are used we try to replace the inventory to keep a minimum working stock on hand at all times. In this stock we keep a supply of rebuilt generators, starters, fuel pumps and distributors to fit the various models in our fleet. As soon as one of these has been replaced on a truck the one removed is rebuilt and placed back in stock.

A portable welder is used in the shop. All necessary welding and cutting can be done right here.

We have a complete servicing department, the function of which is to grease, oil, gas and wash the trucks. The route men bring in the trucks between the hours of 2 and 5 in the afternoon. They first drive to the unloading and checking platform, after which operation the truck is parked in its individual stall in parking lots. From here a service man picks it up and brings it to the service department. It is then filled with gasoline and washed. Due to the nature of our product and to maintain the excellent appearance of our trucks, it is necessary that they be washed daily. As often as the finishes become dull they are polished.

Oil changes are performed on an average of every 3000 miles; lubrications every 1000 miles. This depends, of course, on the truck and the type of service it is in. The men who gas the trucks check this mileage on a small inspection plate provided for the purpose and should an oil change or grease be due the lubrication man is notified and the work done the following night. We use oil containing an additive to cut down gum content and sludge. All trucks are equipped with oil filters with removable cartridge. These cartridges are replaced on an average of every oil change, sometimes more often, depending on the condition of the oil. The crankcase is always flushed before refill if the oil appears to be unusually dirty. After servicing, the truck is returned to its regular stall and connected to the refrigerating unit to freeze down the cold plate.

We are very proud of our body department where complete new bodies are built and mounted on new chassis. This procedure is, of course, curtailed for the present, due to war-

(TURN TO PAGE 120, PLEASE)

For the foremost developments in
TRUCK HARDWARE

Eberhard

HINGES
LATCHES
DOOR IRONS
DOOR CONTROLS
SEAT IRONS
LOCK HANDLES
SEAT PEDESTALS
REFRIGERATOR LOCKS
PANEL DOOR LOCKS
VAN BODY LOCKS
SLIDING DOOR LOCKS
LADDER HOLDERS
ETC.

Look to **EBERHARD**

In the future, as in the past, truckers and body builders can turn with confidence to EBERHARD for advanced and original ideas in chassis and body hardware.

True, the war has interrupted normal activities but the progress being made through our contributions toward winning the war, gives assurance that many additional items will be available.

New designs have been developed and new products are undergoing the thorough tests without which no EBERHARD item is considered ready for the market.

Until these items can be made available we suggest you make selections for current needs from the EBERHARD catalog—or write if our foundry and machine shops can serve special needs.

EBERHARD Long Run
TRUCK BODY FITTINGS

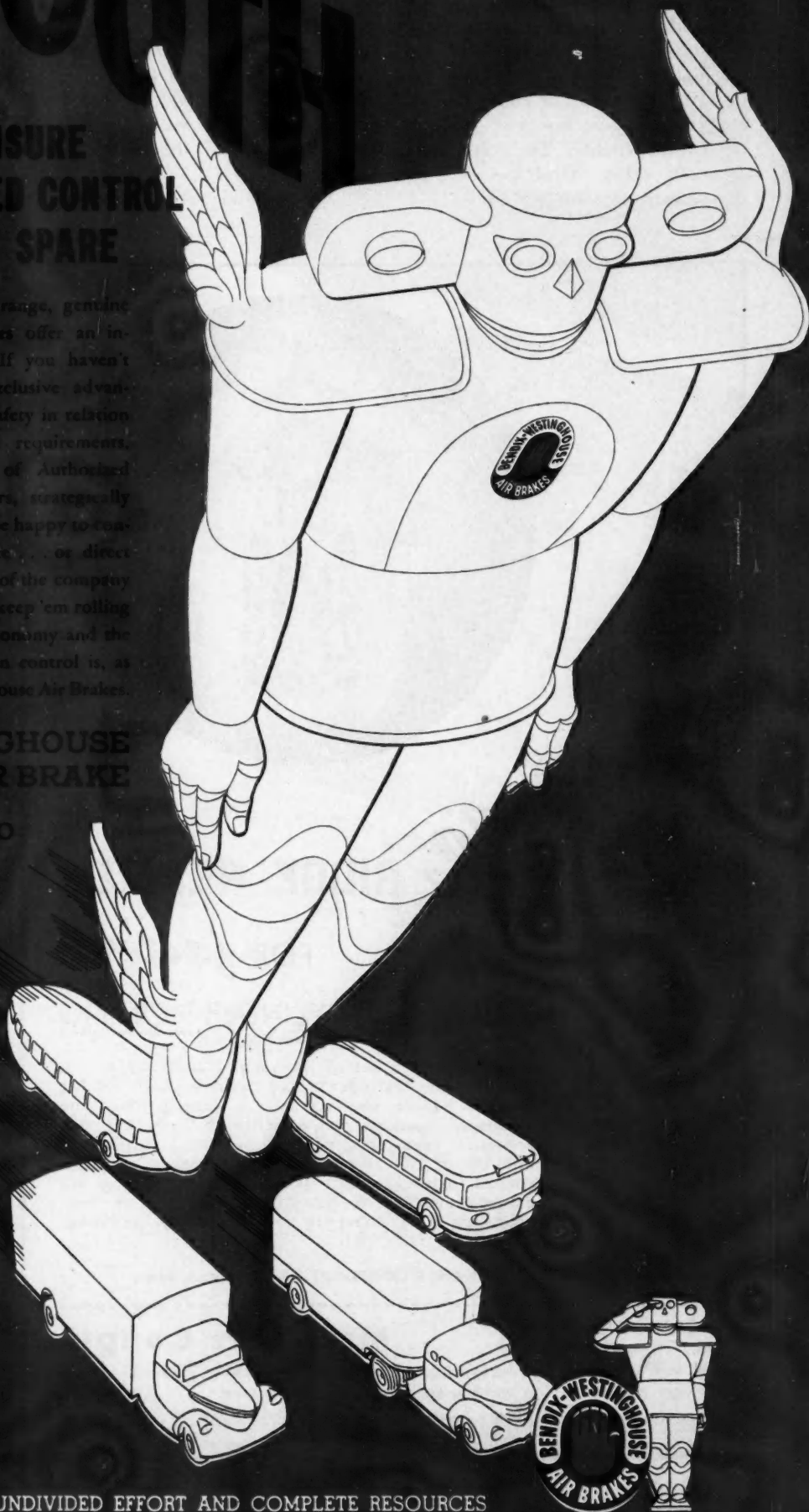
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Company • CLEVELAND, OHIO

SMOOTH

AIR BRAKES INSURE PERFECTLY BALANCED CONTROL WITH POWER TO SPARE

Over the entire speed and load range, genuine Bendix-Westinghouse Air Brakes offer an incomparable power-to-stop. ★ If you haven't already considered the many exclusive advantages of this world standard of safety in relation to your own individual control requirements, any of the nationwide chain of Authorized Bendix-Westinghouse Distributors, strategically located from coast to coast, will be happy to confer with you at your convenience... or direct your request to the general offices of the company at Elyria, Ohio. ★ In the interim, keep 'em rolling and remember... for Safety, Economy and the Duration, your best bet in modern control is, as always, genuine Bendix-Westinghouse Air Brakes.

**BENDIX-WESTINGHOUSE
AUTOMOTIVE AIR BRAKE
COMPANY
ELYRIA, OHIO**



AN ORGANIZATION WHOSE UNDIVIDED EFFORT AND COMPLETE RESOURCES

ARE DEVOTED TO YOUR CONVENIENCE AND SAFETY

SHOP FORMS FIGHT ROAD FAILURES

(CONTINUED FROM PAGE 118)

time restrictions. The bodies are outstanding in that they are an original type and are designed to suit our individual purpose. They are built in three and four compartments with open top in the rear compartment for flexibility. There are doors on both sides. Thus the delivery man can work almost entirely from

the outside. The body as a whole gives the appearance of a closed streamline panel. Framework is made of best grade oak, heavily insulated with cork and kapok and entirely lined with galvanized sheeting. The outside is covered by auto body steel. Up to about a year ago these exterior panels were sent out and a porcelain finish applied. However, due to labor and material shortages created by the war this is no longer available.

It is possible also to completely

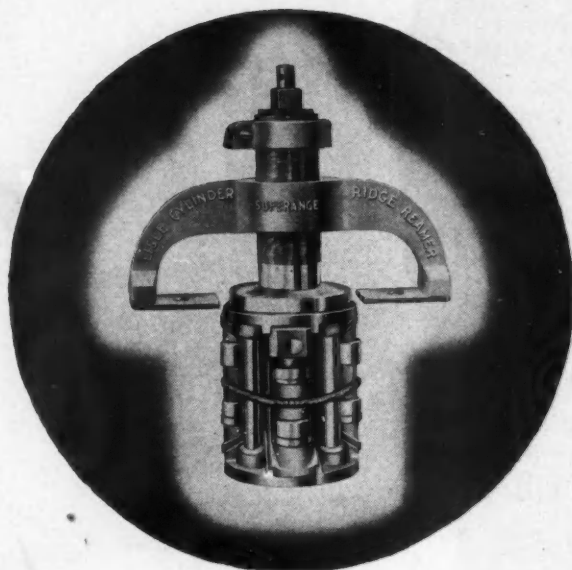
rebuild and remodel any body we now have in use. This has been done in several instances. We have five large semi-trailers in service which were purchased used and completely remodeled and insulated to suit our own purpose. A great saving is made by this procedure. The fact that we use only the best materials coupled with expert workmanship tends for long and inexpensive service. Some of our bodies have been in use on two different chassis and are over 14 years old.

We also have a complete paint shop where we paint new jobs and refinish old ones. Our painting problem differs somewhat because of the action of the milk acids on the paint; also because of the necessary daily washing. In washing we now use the method of spotting with a neutral oil cleaner which feeds the paint rather than deteriorating it. We also have another rather unusual condition caused by the cold plates within the bodies. This causes a perspiration to form on the exterior surface and is injurious to the paint. To offset this we strip off all the old paint and spray on a very tough coat of red oxide primer. On all new bodies we now brush a heavy coat of bitumastic paint on the inside of all steel before applying to the body. This gives us increased insulation and helps to prevent the formation of perspiration. The application of the oxide primer is followed by the usual sanding and application of enamel.

Over a period of eight years we have selected a synthetic enamel which appears to hold up well. We get an average of two years out of each paint job. We have what is known as a combination man doing fender and body repair, spot refinishing and arc welding. It is his job to repair and refinish minor damage.

The men in charge of the various departments are all experienced. L. T. Sellstrom is fleet superintendent, with eight mechanics under his supervision. One of these men is an electrical and carburetor expert, one a machinist, the others all-around first-class mechanics. Mr. Sellstrom has been with us for 15 years and is in a large way responsible for the success of our maintenance plan. Paul Fuire is in charge of our body building department and has been with us for

(TURN TO PAGE 122, PLEASE)



Lisle
QUALITY

RIDGE REAMER

FOR *faster*

CYLINDER HONING



You can save a lot of time and trouble by taking out the top cylinder ridge with a Lisle Ridge Reamer before you start on a honing job. The exclusive, patented lathe action follows cylinder contours regardless of whether the cylinder is tapered or out-of-round. This leaves a straight, smooth cylinder wall; saves a lot of honing because there are no lapmarks, over-cuts, or bell-mouthing that must be corrected by grinding. Saves your hone, too!

LISLE CORPORATION, Clarinda, Iowa

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Box 1017, Clarinda, Iowa

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Send us free literature and complete details on the Lisle Tools checked below.

☐ Ridge Reamer ☐ Pin Hole Hone ☐ Cylinder Hone ☐ Rod Aligner

Name

Address

War Welding must be trouble-free, So they use Quaker State HD!

C. CRAIG NAYLOR

IRVING FRITZ, GENERAL MANAGER

HERMAN GOETZE



NAYLOR & GOETZE WELDING CONTRACTORS

Construction and Pipeline Welding
1500 PAXTON ST. HARRISBURG, PA. P.O. BOX 82
TELEPHONE 7588

May 10, 1943

Quaker State Oil Refining Corp.
Oil City
Pennsylvania

Gentlemen:

As we read testimonials on various oils in trade journals, we feel that in fairness we should tell you about the excellent performance we have in our trucks and welding units using your HD Oil, and in our passenger cars with your Regular Motor Oil.

Previous to using Quaker State Motor Oils we tried several brands. On one we were assured through a film strength test that we would have no consumption and no motor trouble; actually the performance was so disappointing that we gave the last drum away. In the meantime, through the solicitations of your representative and your distributor we tried Quaker State HD Oil. The results were so satisfactory that we are now 100 per cent on Quaker State products, including the Regular Motor Oil for our passenger cars and also lubricants.

We operate five trucks and ten welding units, and we also conduct a Welding School. Many of the graduates are now experienced welders in steel mills and other factories. Since we cover a large area, it is important that our trucks and welding units are not tied up by faulty lubrication, and we are glad to say that with Quaker State HD Oil, we have experienced no trouble whatsoever. We recommend the use of your products to all of our friends.

Yours very truly,

C. Craig Naylor - Partner
NAYLOR & GOETZE



Quaker State HD Oil
for your trucks, buses and tractors



Quaker State Motor Oil
for your passenger cars

QUAKER STATE HD OIL

AND QUAKER STATE SUPERFINE LUBRICANTS

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PA.

SHOP FORMS FIGHT ROAD FAILURES

(CONTINUED FROM PAGE 120)

nine years. He has had 23 years experience in the body building business. James Lawrence, in charge of the paint shop, has been with us for 20 years. We have our own method by which we accumulate fleet costs. Each man makes out a daily time ticket charging the particular truck on which he has performed some

work. If the work amounts to only a very few minutes he makes the charge to the fleet and this in turn is spread as an overhead charge to each truck. Every repair part in our shop is marked with its cost at the time of purchase, for inventory purposes and also serves as the source of the material charge on the particular truck that is being worked on. We have a gas and oil record for each truck for each day of the month. At the end of the month all of the individual charges for labor, parts, gas and oil

are accumulated and charged to the various trucks. The washing and greasing service, of course, is spread over the entire fleet and each piece of equipment shares an equal charge. Permanent monthly records are maintained on the operation of each truck and the fleet as a whole.

END

(Please resume your reading on P. 52)

EASTMAN ISSUES WARNING ON TRUCKS

(CONTINUED FROM PAGE 37)

expedition and quick delivery are of prime importance. Under present conditions, the opportunity to utilize such service is of great value to production and distribution in the war effort, as the military authorities have time and again attested.

So far as the bus is concerned, our dependence upon it in the local transportation of war workers and others is known to all. But it is also a most important factor in intercity transportation. Since the last World War, the bus has, in fact, taken the place of the former local railroad train to a very considerable extent. With their present passenger equipment, which they have not been permitted to increase, the railroads could not possibly restore that local service now. Serious impairment of intercity bus service would, therefore, have a most damaging effect on our intercity passenger service, which, for reasons that are well known, including the great restriction in the use of the private automobiles, has now passed beyond the point of saturation for all available modes of transportation.

It follows, beyond the slightest question, that the preservation, conservation, and maintenance in effective condition of motor transportation is just as vital to the Nation as is the preservation, conservation, and maintenance in effective condition of rail transportation or any other form of transportation. But it is also a fact, which I think few realize as they should, that the difficulties to be overcome, if this is to be done for motor transportation, are even greater than those which confront rail transportation.

Take, first, the matter of manpower, which I rank high on the list of dangers. Motor transport em-

(TURN TO PAGE 124, PLEASE)

for **FLEETS**
Working Overtime
GATKE
BRAKE BLOCKS
Custom-Bilt
for the JOB



In maintaining tough War Essential Schedules, the extra advantages of GATKE Brake Blocks are doubly important.

The smooth, non-grabbing action adds miles to tire life.

Dependable holding power at all service temperatures *reduces strain on drivers.*

Long wear life *avoids adjustments, keeps equipment on the road, and saves precious maintenance hours.*

Whether you operate large or small equipment, on long or short hauls—*whatever your service requirements*—the GATKE Brake Survey System helps you *get the proper brake liners to do the job with maximum safety and efficiency.*

For Trucks, Trailers, Buses, Cars

The recognized Performance Leadership of GATKE Brake Blocks and Liners results from years of pioneer development in perfecting correct brake liners for all kinds of critical service. GATKE CUSTOM-BILT Sets bring you these superior liners selected for the particular vehicle by men who know brakes on the basis of proven results.

GATKE CORPORATION
228 N. LaSalle St. Chicago
HEAVY DUTY BRAKE BLOCK DIVISION

Ask your GATKE Jobber or write us.

PLAN NOW

for the "Big Push"

Next Winter...

• In about three months, you will again be battling snow. Like military warfare, this, too, is a battle of equipment. Plan your strategy now. Check over your equipment and bring your department up to full fighting strength with sufficient Walter Snow Fighters.

Blasting big drifts, travelling icy surfaces, going through quickly where other equipment slips or stalls, Walter Snow Fighters keep ahead of traffic and keep it going. Their "big push" comes from the super-traction of the exclusive Walter Four Point Positive Drive. Its three Automatic Locking Differentials proportion the power to each of the FOUR driving wheels according to its traction at any instant.

To obtain Walter Snow Fighters on time, be early in ordering. Have your Walter distributor give you the full facts, or write us for detailed literature, today.

WALTER MOTOR TRUCK CO.

1001-19 Irving Ave., Ridgewood, Queens, Long Island, N.Y.



...order
**WALTER
SNOW FIGHTERS**

Now!



EASTMAN ISSUES WARNING ON TRUCKS

(CONTINUED FROM PAGE 122)

ployees are predominantly drivers and mechanics. The drivers are for the most part comparatively young men of draft age. The demand for good mechanics—and those who have worked for the motor carriers are very versatile—in the ship-building and other war production plants is tremendous; and in the military forces, because of the great amount

of motor equipment that they use, there is a special and very pressing demand for automotive mechanics. The consequence is that the motor carriers have already suffered a heavy drain on manpower, and, also, as the draft progresses under present plans, the danger of loss of a large part of their effective force will become very grave. In certain parts of the country, particularly Pacific Coast territory, this danger has already ripened into a positive and threatening menace to this form of

transportation. Yet, if there should be even a partial break-down, the military forces would be among the first to suffer in consequence. I know they recognize this fact, for responsible officers of the Army have already brought it forcefully to my attention.

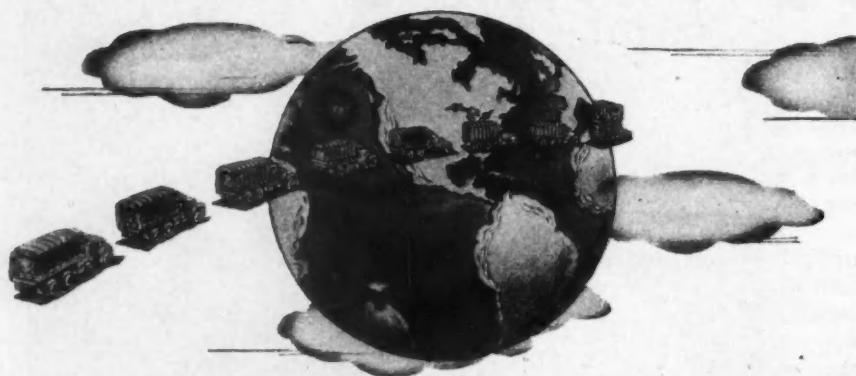
Older men, those rejected for military service, and even women can be and are being used, to some extent, in bus service and even in lighter forms of truck service. But there is much over-the-road truck service which it seems must use, as drivers, physically fit, strong, and comparatively young men, and where months of training are required to develop the necessary degree of skill.

A second major danger stems from the difficulties in obtaining new equipment. After Pearl Harbor, the manufacture of new automobiles was stopped, and also the manufacture of new motor trucks for other than military use after those then under construction had been completed. The manufacture of buses was carried on longer, but on a much reduced scale, and eventually it also was practically stopped, with the exhaustion of manufacturing inventory. The result has been that, for the past year and a half, the country has been dependent on a supply of new trucks equal to less than one-tenth of normal supply, and new bus production has been far below normal replacements.

While it is true that the railroads have also had to struggle on against an overwhelming tide of increased freight and passenger traffic with a most meager supply of new equipment, and are menaced by this fact, there is an important difference between rail and motor equipment. Rail cars and locomotives are comparatively long-lived property. In contrast, trucks and buses, as they have been built, are distinctively short-lived property. Many are now being operated which would long ago have been replaced under normal conditions, and they are kept in service only by constant repairs which have much increased the cost and reduced the efficiency of their operation. Of course this sort of thing cannot go on indefinitely.

It has, necessarily, increased the need for repair parts. The supply of those parts has been uncertain. This

(TURN TO PAGE 126, PLEASE)



GIVING VICTORY A LIFT

ON highways leading to the far-flung battlefields of the world, Cargo Bodies built by the Hercules Steel Products Company are carrying vital materials of war in unbroken lines to our fighting men and their allies.

Hercules Dump Cargo Bodies, too, are giving dependable service in many camps and on many fronts, both at home and abroad.

With so large a proportion of our capacity occupied by war production, it's only natural that our distributors' stocks of Hercules Dump Bodies should be low. However, when you need new equipment for any essential project or a war contract, the Hercules distributor can take care of you, and the same Hercules representative will keep your present Hercules Hydraulic Hoists and Bodies operating at greatest efficiency, if you'll call on him when you need service.

HERCULES STEEL PRODUCTS COMPANY
GALION, OHIO

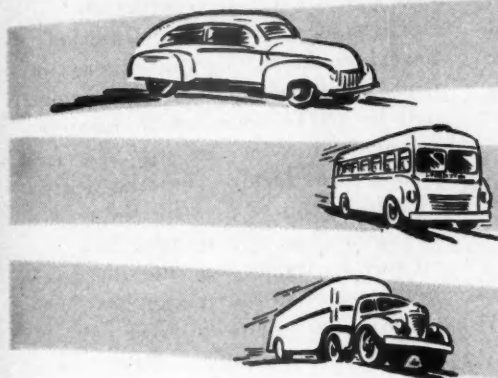
REMEMBER THESE FEATURES OF



- Exclusive Center-Lift Action
- Double Bridge-type Lift Arms
- Balanced Piston Valve, with Finger Tip Control
- 6", 7", 8" and 10" Hoists



KEEP 'EM *On the Move*



Careful and thorough maintenance is the surest way to keep them on the road. The life line to victory needs every mile of service that can be gotten out of our present motor vehicles.

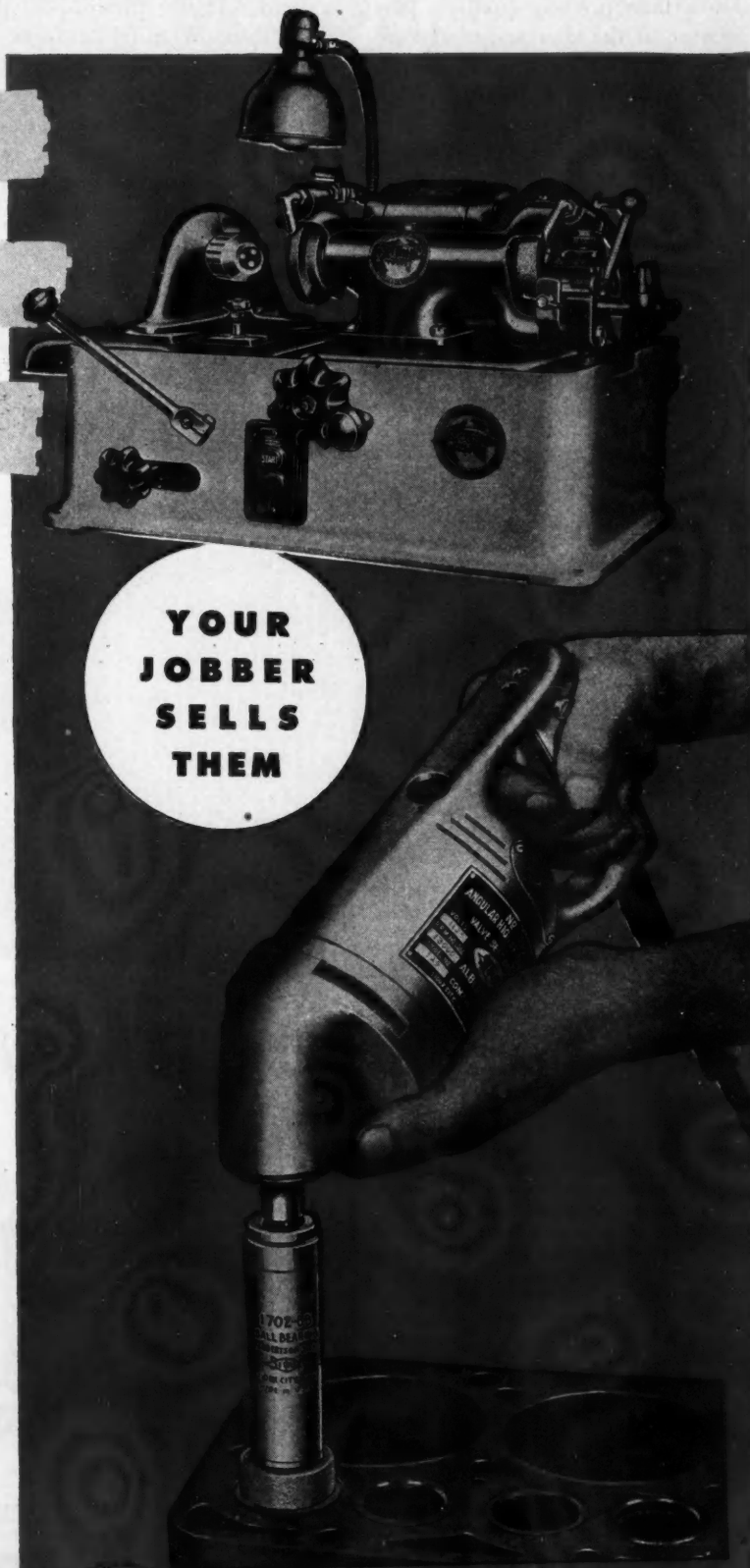
SIOUX Valve Face Grinding Machine WET GRINDER and SIOUX Dual Action VALVE SEAT GRINDER assures factory precision, smoother jobs and finer finish . . . quickly, easily and economically on all valve refacing and valve seat grinding jobs.

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STANDARD THE
ALBERTSON & CO., INC.



WORLD OVER
SIOUX CITY, IOWA, U. S. A.



**YOUR
JOBBER
SELLS
THEM**

EASTMAN ISSUES WARNING ON TRUCKS

(CONTINUED FROM PAGE 124)

situation is improving, I am glad to say, but the repair parts are often of lower than pre-war quality. This is because of the shortage of critical materials and the need, particularly, for conservation of high-grade alloy steels. The repair parts now supplied often give inferior results in cost and efficiency of performance. While this may in part be due to

inexperience in the use of these substitutes, it is none the less a serious condition.

Finally, the financial condition of many of the motor common carriers of property has apparently been impaired. Their situation in this respect is quite different from that of the railroads. The railroads, because of their pre-war unused capacity, have been able to take on a great part of the heavy increase in traffic without a corresponding increase in expense or in overhead charges.

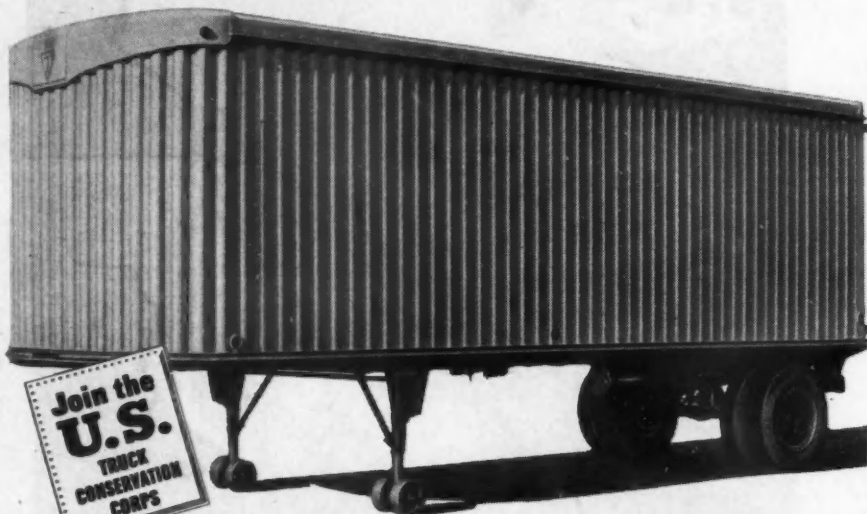
Among the reasons are the ODT orders which have required the heavier loading of cars, and the fact that considerable traffic now moves for long distances in practically train-load quantities. Particularly is this true of the great new petroleum traffic to the Eastern seaboard. For these various reasons, railroad net earnings have improved very greatly.

The trucks, as well as the railroads, have been helped by the increase in traffic volume and concentration, and by ODT orders which have resulted in heavier loading and improved load factors; but the degree of help in this respect for the trucks has been less. Both have had increases in wages, but the increases in the case of the trucks have followed a much less uniform pattern, and they have often fallen very heavily on individual carriers. It also seems to be true that the heavy drain on motor transportation manpower has considerably reduced the efficiency of employee performance, a result which has been felt especially by such carriers as have extensive terminal operations. Along with this goes the increased cost of operation caused by lower efficiency in the mechanical performance of the vehicles. Finally, it appears that, no doubt because of railroad congestion and the steps which have been taken to accomplish a heavier loading of less-than-carload rail traffic, the motor common carriers which serve both large and small communities and handle both truckload and less-than-truckload traffic have had a very large increase in so-called minimum package business, which, under present conditions, is very expensive to handle.

These conditions, which I have thus undertaken to summarize, of course all emphasize the necessity for conserving truck and bus operations in every possible way. It was the rubber shortage which led us into this campaign of conservation, and that remains a prime reason, but the present and prospective shortages in manpower and vehicles, the inefficiencies which have been forced upon motor carrier operation by war conditions, and the impaired earnings of many of the vital trucking companies, to say nothing of the gasoline shortage in the Eastern area, strengthen the necessity for

(TURN TO PAGE 128, PLEASE)

KEEP IT NEW



THE JENNY Steam-Spray Way

Mighty few trailer-truck bodies are available . . . the ones you're running now may have to see you through. So keep 'em young by keeping 'em clean with Hypressure Jenny. Besides definitely prolonging the life of your equipment, cleaning the Jenny Steam-Spray Way before repairs, cuts lay-up time in half. Periodic cleaning removes accumulated dirt and grease that may add up to 400 pounds deadweight to your load . . . uncovers hidden defects and worn parts before break-downs occur . . . reduces fire hazards. In addition, Hypressure Jenny cleans tools, grease pits, runways, garage windows, walls, floors, etc., faster, cheaper and better than any other known method. And, when you consider the increased service-life of your trucks, their greater road-time, due to speedier repairs, plus man-hours saved on all cleaning jobs, you'll find that Hypressure Jenny pays for itself many times over. Write today for literature and price.



One fleet owner saves \$3,400 annually with this type Jenny.

HYPRESSURE JENNY DIVISION OF

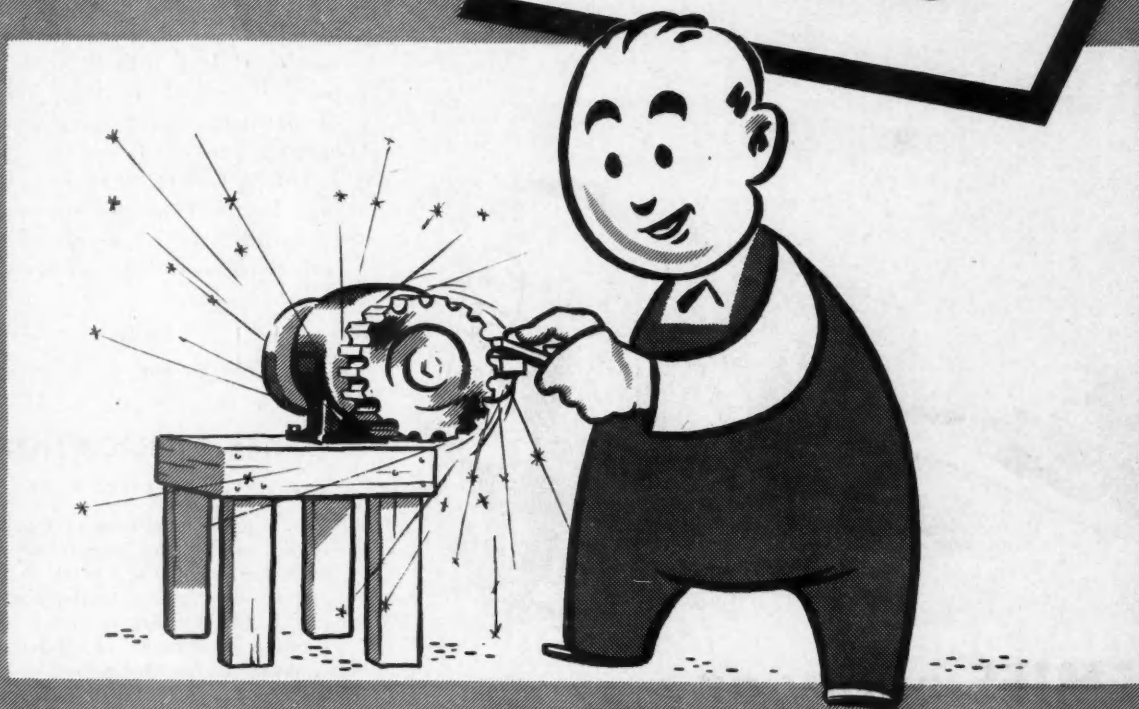
HOMESTEAD VALVE MFG. CO.

P. O. BOX 90 • • • CORAOPOLIS • • • PENNSYLVANIA





**GEARS are not
GRINDING
WHEELS**



When gears are correctly designed, precision-cut and properly mated, they run smoothly and quietly, with no "grinding noises." If given regular inspection and proper lubrication . . . if not submitted to abuse from neglect or careless shifting . . . the life of your Fuller Transmissions should match the life of your truck. If your Fuller Transmissions are not living up to the standards we have set up for Fuller products, our Service Department would welcome your comments and try to help you analyze and correct any difficulties you may be experiencing.



FULLER MANUFACTURING COMPANY • • KALAMAZOO, MICHIGAN

EASTMAN ISSUES WARNING ON TRUCKS

(CONTINUED FROM PAGE 126)

continued conservation, and the opportunities for self help in this way have not been exhausted. There is much which the motor carrier operators can do to help themselves which they have not yet done.

I fear, however, that the problem cannot wholly be solved in this way, and that is the particular reason for this statement. Any general break-

down in motor transportation, or even a breakdown in one or more areas, would have consequences, in its impact upon our transportation service, so serious that they would react gravely upon our whole war effort. Transportation, as I have indicated, is in these days an essential and very large part of that effort in many different ways.

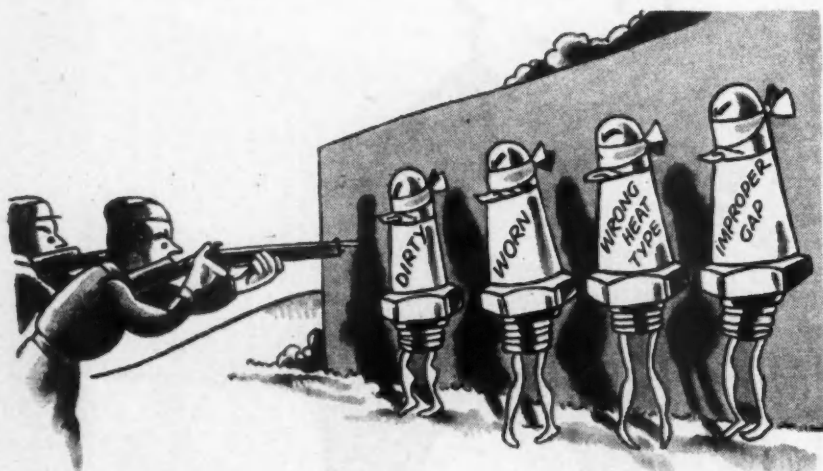
In the last analysis we must have drivers and mechanics for essential motor transport, whatever may be necessary to accomplish that result.

They are, in their way, quite as vital to the war effort as soldiers and sailors. The time has come, also, when we cannot safely proceed on the theory that our supply of motor vehicles can be sufficiently maintained, without more extensive replenishments of vehicles and a better flow of replacement parts than have yet been permitted. Finally, those in authority who have control over rates and charges must give serious thought to the need for protecting the carriers against financial results from operations which will jeopardize the continuance of these operations. They must also bear in mind that this is a problem which cannot wisely be dealt with from the standpoint of general averages. The needs of particular kinds and groups of carriers must be taken into account.

This statement, in short, is a warning. In the long run, the only way to avoid trouble successfully is to foresee its possibility and prepare for it in advance.

END

(Please resume your reading on P. 38)



ENEMIES every one... GUILTY of "Mechanical Treason"

Every drop of gasoline wasted today in a car, truck or tractor sabotages our fighting planes and tanks.

That's why we say, inefficient spark plugs are not only downright poor economy—they actually commit "mechanical treason."

Edison precision engineered spark plugs cut fuel waste. You can count on them for hot firing and 100% efficient conversion of fuel into energy. After all, Edison makes them—Edison, the greatest name in electricity!



Edison

SPARK PLUGS

EDISON-SPLITDORF CORP., WEST ORANGE, N. J.

FREE PUBLICATIONS

(CONTINUED FROM PAGE 42)

will find much of interest in a publication just released by the Department of Commerce, Bureau of The Census, in cooperation with the National Conference on Uniform Traffic Accident Statistics. Entitled "Uniform Definitions of Motor Vehicle Accidents," it is designed for statistical classifications only, and except for the items covered by the manual, does not apply to the standards of motor vehicle accident reporting.

The adoption of this manual by those engaged in the collection, tabulation, and publication of statistical data relating to motor vehicle accidents will constitute a big step toward the achievement of uniformity and comparability of published statistics. Write L123 on the postcard for your free copy.

END

(Please resume your reading on P. 43)

E. J. Sanders V.P. of Kontrol-Fan, Inc.

Announcement was made recently of the appointment of E. J. Sanders as vice-president and director of Kontrol-Fan, Inc., Glendale, Cal. In making the announcement, Ed Bishop, president of the firm, stated that Mr. Sanders also will act as chief engineer. Kontrol-Fan, Inc., now active in special government work, manufactures thermostatically operated, controllable-pitch blade fans for gasoline, natural gas, and diesel engines and other industrial equipment.

17. Johns-Manville factories and mines strategically located throughout the U. S. and Canada

The J-M Brake Survey Plan applies J-M "Know-How" to your individual operating problems. The J-M representative shown below, like others throughout the country, will be glad to make such a survey, covering all the friction material requirements for your entire fleet.

HE BRINGS YOU SPECIALIZED *"Know-How"*
TO MEET YOUR INDIVIDUAL BRAKE LINING NEEDS!

TODAY, highway transportation of freight and passengers is a vital part of the war effort. Smooth, dependable operation and maximum safety are more important than ever before. It takes "Know-How" to provide such service, and Johns-Manville has it . . . built up through 85 years of experience.

Johns-Manville manufactured the first asbestos friction materials used by the automotive industry . . . has since, through constant research, developed specialized brake linings and clutch facings for every type of service. And to insure the most efficient

use of these products J-M was first to offer fleet owners a Brake Survey Plan for accurate specification and proper selection of Johns-Manville Friction Materials to fit each individual operating need.

For many years hundreds of large fleet owners have found that, through this plan, they are assured the safest, most economical braking they have ever known. Why not let the J-M Brake Survey Plan, backed by J-M "Know-How," do the same for you? For details, write Johns-Manville at New York, Cleveland, Chicago, St. Louis or San Francisco.



JOHNS-MANVILLE BRAKE LININGS

FLEET-TESTED SETS

BRAKE BLOCKS

CLUTCH FACINGS

NEW PRODUCTS

(CONTINUED FROM PAGE 43)

by one man, and occupy only about three cubic feet of space.

Use free postcard for more details

P134. Stop Nut for Plywood

A new self-locking fastening device for use on plywood construction has been developed by the Elastic Stop Nut Corp. of America, Union, N. J.

The device consists of a regular elastic stop nut, with the red cellulose locking

collar, interlocked with a cleverly contrived basket that locks into the plywood and holds the nut securely. Four prongs at the corner of the basket sink into the surface of the plywood, and two feet inserted in the hole are forced into the wood as the nut descends, firmly anchoring the basket. Spring fingers at the top of the basket clasp the nut after it is seated, and hold it firm against axial play.

The nut can be installed in three easy ways; driven in with a hammer, forced in with a press, or drawn in with a bolt. No special tools are needed. After it has been applied to the surface, the nut is held against turning by four prongs on the corner of the washer plate, and also

by the feet that have been pressed into the sides of the hole. This construction makes the nut independent of the thickness of the material, it can be used on plywood from 1/8 in. up. A small hole, 9/32 in. in diameter, is all that is needed in the wood.

Use free postcard for more details

P135. New End Wrenches

The New Britain Machine Co., of New Britain, Conn., announces a new wrench which replaces the so-called right angle wrench, and which can be used for brakes



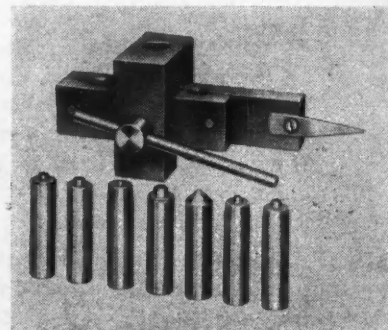
and many other purposes where a wrench must operate in a very limited space. It is claimed that these new wrenches will easily remove nuts which would be impossible with any other wrench because they actually function in spaces where only an inch or two of movement is permitted. They have 15 and 60-deg. angle heads, permitting 24 different bites on a nut in a 360-deg. circle.

A priority rating of A-9 or higher is required for the purchase of this tool.

Use free postcard for more details

P136. Portable Flaring Tool

A new heavy-duty portable flaring tool that produces a double-lap flare on steel and non-ferrous tubing, has been introduced by Everhot Products Co., Chicago, Ill. This new "Flaremaster" tool is designed to produce a double strength flare that will not crack or collapse. It is designed to produce the correct 45 deg. double-lap flare for SAE flare type and inverted flare type connections on steel tubing.



The tool is compact and consists of only three parts; namely, a pair of holding jaws and a U-shaped clamp with a built in vise. It does not require special wrenches nor use of a work bench and can be used anywhere. All wearing parts and punches are of hardened steel. Jaws are counter-bored to provide exact length of tubing to insure correct double flaring for each size. Tubes are held with a smooth, firm grip, without serrations or (TURN TO PAGE 132, PLEASE)



On LIGHT BODY WORK
Or
HEAVY CHASSIS REPAIRS

MARQUETTE
REGISTERED U.S. PAT. OFFICE
A.C. ARC WELDERS

deliver Superb Welding Performance



You'll see the batting average of your service shop go up if you install an easy to operate MARQUETTE WELDER.

The proven performance of these stalwart A.C. machines has demonstrated that they really deliver the goods when the game calls for fast, flawless, low cost welding in automotive maintenance and repair. Electric welding reduces lay-up time and cuts cost by making repairs without replacement of critical spare parts.

TEN MODELS, 125 to 400 amperes. Completely Equipped. Low Initial Cost—Low Operation Cost—Negligible Up-keep. No "Magnetic Blow". 10 Day Delivery.

Send for free, 24 page illustrated booklet.

MARQUETTE MFG. CO., INC.
Minneapolis, Minnesota



MARQUETTE
REG. U.S. PAT. OFF.

A.C. ARC WELDERS

FIRST

AID



FOR AGING MOTORS

As motors get older, maintenance gets tougher . . . that puts the main problem of your continued operation right up to faultless lubrication. You can keep rolling without letup or break down with WIX FILTEREFILS in your oil filters—they guarantee the visibly clean oil that keeps motors young!

WIX FILTEREFILS are the new day construction in filter cartridge replacements that handle heavy duty, compounded oils or untreated, straight run oils with equal ease and perfection. Moreover, WIX has the inbuilt, sludge-thirsty guts to keep on doing it longer . . . no chemicals, no abrasives—just a superbly engineered element that makes oil go farther and do more. Yes, you can get deliveries NOW!

wix
TRADE MARK

FILTEREFIL

ACCESSORIES CORPORATION, GASTONIA, N. C.



Warehouses: NEW YORK • CHICAGO • KANSAS CITY, MO. • MINNEAPOLIS • LOS ANGELES • SAN FRANCISCO
CANADIAN FACTORY: WIX ACCESSORIES CORP., LTD., 161 BAY ST., TORONTO, ONTARIO

NEW PRODUCTS

(CONTINUED FROM PAGE 130)

threads to mar or cut the tubing or form minute cracks that lead to breakage under vibration.

Use free postcard for more details

P137. Aluminized Sheet Metal

Complete details of Armco Aluminized steel, sheet steel coated with pure aluminum, have been released recently by the market development division, The Ameri-

can Rolling Mill Co., Middletown, Ohio. Combining the physical properties of steel with the surface properties of aluminum, this material is said to provide good corrosion resistance, heat resistance and eye appeal.

Base metal is regular carbon steel or copper steel, the sheet being available in standard gages from 14 to 28 gage. Corrosion resistance of the surface is said to be equal to an aluminum sheet.

Available now for war use, post-war possibilities include motor truck mufflers and tailpipes, truck and trailer bodies and tanks.

Use free postcard for more details



WITH materials daily growing more scarce, you should make ignition replacements with parts that will give lasting service — Long Life is doubly important today!

Use "Blue Streak" Ignition Parts, the line which, through the years, has earned the right to the slogan — "Long-Life Peak Performance."

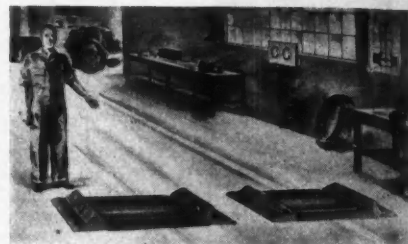
STANDARD MOTOR PRODUCTS, INC.

37-46 Northern Blvd., Long Island City, N. Y.

P138. Heavy Duty Brake Tester

A new truck, trailer and bus brake tester, the Bennett-Feragen, is announced by the Safety Equipment Co., South Bend, Ind. By accurately measuring brake force, it is claimed that this machine permits determining actual stopping distance, reveals necessary mechanical adjustments, shows braking power of loaded vehicle, measures brake torque, eliminates road tests, equalizes brakes, sets up standards for correct stopping, indicates and prevents tire wear.

The ability of the tester to test the brakes of a loaded vehicle is a feature which assures greater safety for fleet operations. In testing, the vehicle wheels are cradled between pairs of revolving rollers,



which are so constructed as to provide friction surfaces equivalent to the tire on dry concrete. The rollers turn the wheels against normal running friction. When the brakes are applied, the force required to turn the wheels against the brake resistance is registered on the dials. This reading is the actual braking force existing between the tire and ground surface. The tester will handle the largest and heaviest vehicles with an axle capacity up to 22,000 lb.

Use free postcard for more details

END

(Please resume your reading on P.44)

Fisk Dealers Operating War Necessity Service

A War Necessity Service, aimed at keeping all necessary transportation in operation, has been developed for its dealers by the Fisk tire division of United States Rubber Co.

Keystone of the Fisk plan is a schedule of regular inspections for fleet operators and the filling out of truck tire maintenance reports. A special kit of books and other material necessary for the operation of the plan is being sent to each dealer. Included in the material is: The Fisk Manual, containing complete specifications on all types of Fisk truck and bus tires, tubes, replacement flaps, camelback, information on tire selection and maintenance, etc.; Truck Tire Maintenance Report: Load and Inflation Chart, with complete figures for truck and bus balloons, extra ply balloons, delivery tires, light truck and bus tires; Truck Battery Guide, with detailed information on installation and replacement of heavy duty batteries with passenger car types; How to Save Truck Tires, containing a complete listing of operating conditions which affect truck tire mileage as well as the life of the vehicles, and system of preventive maintenance records and other data.



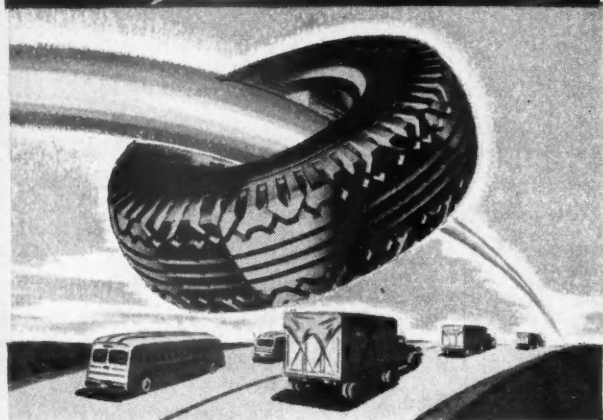
Ace up Our Sleeve...

Dayton's concept of post war product planning does not include long range guessing. It doesn't have to—because, when the cards are dealt in the game of peacetime tire making, we of Dayton are sitting in with a *big ace up our sleeve*

That ace is Dayton's 37 years of pioneering outstanding tire "firsts"—during nearly four decades of continuing leadership and the development of natural and synthetic rubber compounds and processing methods.



FIGHTING . . . Wherever the U. S. and her Allies are fighting today you will find rugged, durable Dayton Thorobred Tires proving their inbuilt strength on anti-aircraft guns, cannons, trucks and trailers.



FOR FREEDOM . . . Depending on the military, political, economic and technical results of this war—Dayton's post war Thorobred Tire will be made of either natural rubber, synthetics, rayon cord or cotton cord—or *any combination of these*. But whatever it is made of, tomorrow's Dayton Thorobred will be, as always, an outstanding product of Dayton's continuing quality leadership.

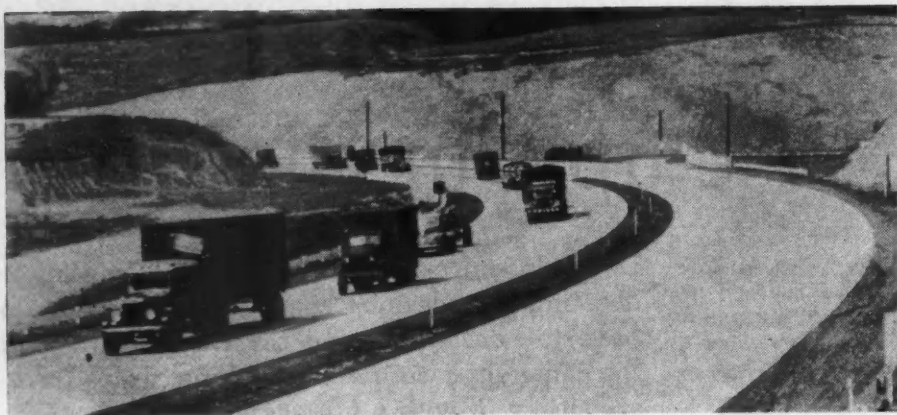
Dayton Thorobred Tires are available to qualified fleets under the rationing program.

THE DAYTON RUBBER MANUFACTURING COMPANY • DAYTON, OHIO.

Dayton Tires

BY DAYTON...PIONEER IN SYNTHETICS...LEADER IN RUBBER

IN 1934—climaxing 20 years of notable tire "firsts," Dayton built America's first successful synthetic rubber tire. Since then our research, use and development of synthetic application to automotive and industrial rubber products has been continuous and successful.



According to a survey made by Mack Trucks, Inc., 21,000,000 lb. of freight, 85 per cent war materials, is being trucked per day over America's Dream Highway, the Pennsylvania Turnpike. The survey discloses further that last year trucks accounted for 52 per cent of the toll revenue and that the first quarter of this year it amounted to 72 per cent; that 95 per cent of all trucking between the Midwest and East, through the area of the Turnpike, uses this road and pick up two extra trips per month—hauling approximately 20 per cent more freight with the same equipment; that trucks save an average of 5 hr. driving time per trip, 12 gal. gasoline, 1 qt. oil, and 9000 ft. of vertical climb; that trucks are able to make war material deliveries from Chicago, St. Louis and Detroit to New York, Philadelphia and Baltimore in from 28 to 36 hr.

THERE'S A WAR TO WIN SO PRESERVE YOUR EQUIPMENT

Along with other manufacturers we are engaged in the service of our armed forces. That means Uncle Sam comes first and his wants must be provided for to the best of our ability. This also means that unfortunately we cannot service as adequately as we should like to the Weidenhoff equipment now operating to keep domestic automotive transportation functioning. We realize our obligation to the owners of Weidenhoff equipment everywhere and still will do all in our power to help them get the greatest good out of their investment. For the duration we shall be limited in accomplishing this. Meanwhile we suggest all users of equipment to read the following hints.

All switches of a test bench or other apparatus should be in the OFF position when the equipment is not in use. It provides protection to the meters.

Clean corrosion of any kind from switches with fine sand paper or emery cloth. This applies particularly to switches carrying heavy current.

Be exceedingly careful of voltmeters, ammeters, etc. If they are damaged or broken, replacement of the unit may be impossible.

Take exceptionally good care of test leads. Keep them free from oil and grease. Remember oil and grease affect rubber insulation and test leads for replacement purposes are out for the duration. It's a good plan to wash the leads with soap and water, using a sponge or rag.

Avoid using a vacuum gauge on an engine that is back firing. The interior mechanism of the gauge may be damaged and replacement of the gauge is doubtful.

Don't pull testing equipment around by means of the wire leads attached to it. Also, when a lead is detached grasp it at the terminal.

Be careful of cars passing over rubber hose attached to a gas analyzer. You know what the rubber situation is. And, the hose should not be left lying

on the floor where it may contact oil and grease.

If amperage or voltage is to be checked be sure to select a scale high enough so the meter will not be damaged. Overloading the meter may damage the unit and it is doubtful if a new meter can be obtained.

Moisture of any kind is harmful to electrical testing equipment. Therefore, at regular intervals wipe off any trace of moisture and keep the equipment in a dry place.

Test bench motors should be lubricated in accordance with the instructions furnished. This point is easily forgotten since these motors are used intermittently. Keep the motors clean and never allow the brushes to become worn so that the brush holders might damage the commutator.

If dry cells are used in the equipment remove them when they are "dead". Such exhausted cells become corroded and may cause corrosion of adjacent units.

If you have a growler don't leave it turned on after removing the armature on test. The growler will overheat and may burn out.

Finally, remember that your testing equipment will have to do for the duration. Therefore, conserve it in every way possible.

BUY WAR BONDS

Joseph Weidenhoff, Inc.



BUY SAVINGS STAMPS

Chicago, Illinois, U.S.A.

New White Distributor Announced

The newly formed Truck Equipment Co., made up of veteran truck men, has been named White Motor Co. distributor for the State of Arizona, according to announcement of J. N. Bauman, White vice-president in charge of sales. Headquarters of the organization are located at Phoenix where the latest in maintenance and repair facilities have been set up for the benefit of truck users. Principals of the Truck Equipment Company are William Utzinger and Frank A. Hall who long have been distributors of White trucks and busses in Wyoming and New Mexico. Les Shaw, well known Phoenix truck executive, is general manager of the distributorship. Shaw held the White dealership in Phoenix for a number of years.

Herbert Robinson Expands Operations

As part of an expansion program, the purchase of property 40 x 100 ft. in size at 1922-24 Springwells Avenue, Detroit, Mich., by the Power Brake Parts Mfg. and Sales Company and subsidiary firm, Truck Parts Service, is announced by Herbert M. Robinson, president and general manager of the company.

Reo Buys Boston Branch Property

As part of a forward-looking program for the further development of distribution and service facilities, purchase of the property at 983 Commonwealth ave., Boston, Mass., which has for many years been occupied by Reo's Boston branch, was announced today by Reo's general sales manager, Don C. Streeter. Under Manager Ted Paul, the Boston branch serves Eastern Massachusetts and part of New Hampshire.

Dr. Robert F. Ruth-ruff has been appointed Director of Research for Sherwin-Williams and its allied companies. Prior to joining the Sherwin-Williams organization in 1939 he was associated with E. I. du Pont de Nemours & Co., Standard Oil Company of Indiana and The M. W. Kellogg Company.





Clipper pilots have extra eyes

To assist in making night-time landings at the far-flung marine and land bases of Pan American World Airways, every Clipper captain has several "extra eyes"... radio, navigation, wing lights — and a piercing, dependable beacon light.

The big Diesel generators that pump power to these street lamps of the sky are the Clipper stations' nerve centers. They supply electricity for work shops, kitchens and living quarters—as well

as illumination. They must be kept going at top efficiency night and day. To make sure they do, Pan American lubricates its Diesels with RPM DELO.

RPM DELO frequently doubles the time between Diesel overhauls. It ends ring-sticking, protects bearings against corrosion, cuts ring and liner wear to the thinnest minimum. No other lubricating oil gives your Diesels the protection they get from RPM DELO—because no other compounded oil com-

bines its ring-cleaning, non-corrosive and anti-oxidant properties.

ORDER RPM DELO FOR YOUR DIESELS

RPM DELO is marketed under these names:



RPM DELO
Caltex RPM DELO
Kyso RPM DELO
Signal RPM DELO
Sohio RPM DELO
Imperial-RPM DELO
CONCENTRATE

Ask your Diesel engine manufacturer or distributor for the RPM DELO supplier in your vicinity

STANDARD OIL COMPANY OF CALIFORNIA

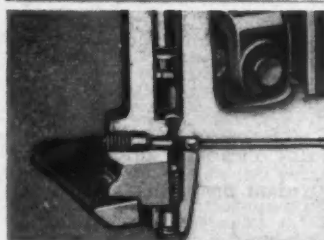


The Finest PORTABLE HYDRAULICS *ever built*

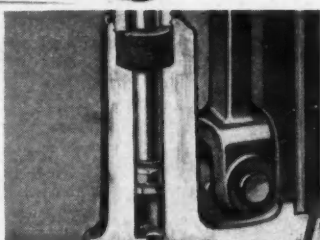
● The minute you take hold of one of these jacks you know you're handling a masterpiece of performance. You can actually *feel* its fineness and precision.

Walker portable hydraulics are the product of years of engineering development, manufacturing experience and gruelling use. Their exclusive features — *improved, perfected and trouble-proofed* — assure greatest dependability and long life.

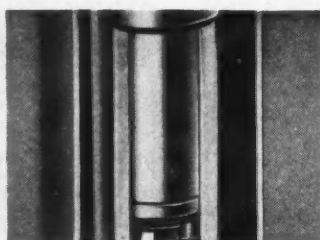
Equip your fleet with "Series 900" Walker Portable Hydraulic Jacks and avoid time-wasting delays. Capacities range from 3 tons to 20 tons.



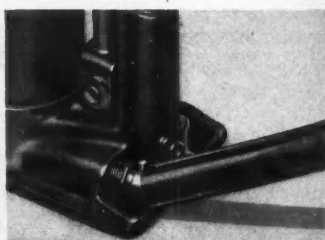
"RYTH-MATIC" VALVE ACTION • Smooth, dependable lifting power—with no wasted handle strokes—is accomplished by this internal valve action. Suction and discharge valves act in perfect synchronization, at lightning speed. The closing action is perfect.



"SNUG-FIT" POWER PUMP • Enduring efficiency and long life are assured from the power pump piston, machined from select steel and "snug-fit" into the pump barrel. Strong, specially impregnated cup leathers oil-seal it against leakage.



"GUN BARREL" STEEL CYLINDER • Ample margins of strength and safety are outstanding. Cylinder, in which power ram operates, is special high carbon steel tubing drawn to a gun barrel finish. Special Walker process leak-proofs the joint between cylinder and base.



MICRO-ACCURATE SAFETY RELEASE CONTROL • Safety and ease in lowering are provided by constant and accurate control over the speed of lowering. The release is operated by a special bayonet on end of jack handle to afford operator a position well out of danger.

WALKER LEADS IN JACKS

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN • Also Makers of Walker Silencers and Electric Lifts



UNCLE SAM HAS NO TIME FOR EAR-TESTING METHODS

• "By guess and by gosh" methods are out in this man's war. When Uncle Sam's rolling stock breaks down, it must be fixed in a hurry. Too much depends on the movability of equipment and supplies.

Lanagan precision electric testing equipment has gone to war 100%. Accurately and quickly it puts its finger on ignition and generator troubles, reducing shop-time and helping

to make repair-work more dependable.

After the war is over, and bicycles are a dime a dozen, Lanagan Testing Equipment will again do a dependable trouble-shooting job for automotive repairmen. These newly designed test-units, that are helping to keep the armed forces rolling, will make your work on the complicated motors of tomorrow easier and more accurate.

BUY WAR BONDS AND STAMPS



LANAGAN AND HOKE

431 E. COLLOM STREET, PHILADELPHIA 44, PA.

PRECISION AUTOMOTIVE TESTING EQUIPMENT

AUGUST, 1943

Use postage-paid card inserted in this issue for free information on advertised products

137



The Union Oil Co., Los Angeles, recently traded in a 1919, Model 40, White truck after 24 years of steady service in the company's oil well area. James Knabb, Union's automotive supervisor for the southern district, is shown inspecting the new, Model 820, White purchased to replace the veteran



Mrs. Shirley Lohr operates this White Super Power truck at the Mare Island Navy Yard like a veteran. Formerly a clerk-typist, she requested a transfer to transportation where she gets a great deal of satisfaction out of being behind the wheel of a big truck

Governors

TAKE CARE OF THEM

The war has taught us many lessons, not the least of which is to take care of what we have.

Your governors are doing an important job by prolonging the useful life of each vehicle with a minimum of replacement parts and shop service. Make sure every one is operating efficiently. Governors, like carburetors, accumulate carbon and dirt and should, after a reasonable period of service, be factory cleaned and overhauled.

New governors are available with proper priority rating or certificate. Send for manual, "Everything Under Control."

HOOF PRODUCTS COMPANY
6543 SO. LARAMIE AVENUE
CHICAGO 38, ILLINOIS

BUY MORE WAR BONDS

HOOF FULL POWER GOVERNORS

"Satisfactory All-Synthetic Truck Tire Has Not Been Built"—Seiberling

Because tire manufacturers have not yet licked many problems of synthetic tire production, there will be "very, very few" new all-synthetic tires for civilians this year, according to J. P. Seiberling, president of Seiberling Rubber Co.

In a public statement Mr. Seiberling said that while the job of producing quantities of raw synthetic rubber has been virtually accomplished, many problems of building it into satisfactory tires and tubes are not yet solved.

"The public has been led to believe that plenty of new tires and tubes made of synthetic rubber will be available very soon," Mr. Seiberling said. "That is not the case. The first all-synthetic passenger car tires to be built on a production basis are just now coming off the lines, in limited quantities.

"No satisfactory all-synthetic truck tires have been built as yet by anyone.

"No satisfactory all-synthetic tubes have been built as yet by anyone.

"It will probably be the middle of next year before civilians can get the new tires they need—even though there will be plenty of raw synthetic rubber.

"Most of the so-called synthetic rubber tires developed to date were only partly synthetic. They all contained some natural rubber."

Disputing claims of "exclusive" synthetic rubber knowledge, Mr. Seiberling pointed out that no manufacturer has any more knowledge in building all-synthetic tires than any other. Research chemists and engineers "are working day and night in unison to lick the unsolved problems. . . . All information is available to all manufacturers."

Smith & Gregory—Brakes, Inc., Merge

On July 1, 1943, Smith & Gregory of N. Y., Inc. and Brakes, Incorporated, of Long Island City, N. Y., merged to operate under the name of Brakes, Incorporated, with the main office at 535 W. 35th St., New York City. Other offices are located at 37-16 Queens Boulevard, Long Island City and 198 Fourth Ave., Brooklyn, N. Y.

Brakes, Inc., will continue to represent the Bendix-Westinghouse Air Brake Co. in metropolitan New York, Long Island and West Chester, N. Y.

Autocar Advances Reiter

Albert A. Reiter of Brookline, Pa., was appointed assistant secretary and assistant treasurer of the Autocar company at the June meeting of the board of directors. Mr. Reiter joined the accounting department of the Autocar factory organization on April 13, 1911. For the past several years he has been office manager.

Happensack Joins Bejin Cartage

Appointment of A. F. Happensack as Director of Operations for the J. E. Bejin Cartage Co., Inc., Detroit, is announced by J. E. Bejin, president of the company. Happensack brings to the Bejin organization over 15 years of motor freight transportation experience.

Because the W.P.B. has reserved "PRESTONE" Anti-Freeze for trucks



YOU CAN SAVE GAS...

With "Prestone" anti-freeze in your trucks, no need to idle the engine to prevent freeze-ups!

AND PROTECT YOUR WAR-SCARCE EQUIPMENT THIS COMING WINTER

"Boil-away" alcohol requires frequent check-ups of anti-freeze strength. "Prestone" anti-freeze contains no "boil-away" alcohol—*stays in your radiator*. Removes the risk of ruined equipment due to accidental freeze-up!

WE URGE YOU TO GET YOUR SUPPLY NOW!

Wartime supplies of anything are uncertain at best. To be sure you're safe next winter, better get your "Prestone" anti-freeze now!

The words "Eveready" and "Prestone" are registered trade marks
of National Carbon Company, Inc.
Unit of Union Carbide and Carbon Corporation



SAME PRODUCT AS ALWAYS

CAN'T EVAPORATE
OR BOIL AWAY!
PROTECTS AGAINST RUST
AND CORROSION!
ONE SHOT LASTS ALL WINTER!
YOU'RE SAFE AND YOU KNOW IT!



**SAME AS
LAST YEAR**
O.P.A. Retail Ceiling Price
\$2.65
per gallon

PRESTONE ANTI-FREEZE

BUY WAR BONDS AND STAMPS

**DON'T REPLACE
WHEN YOU CAN
REPAIR**

Delco-Remy WARTIME SERVICE NEWS

**DON'T REPLACE
WHEN YOU CAN
REPAIR**

RECORD SET IN DISTRIBUTOR CONTACT POINT MAINTENANCE

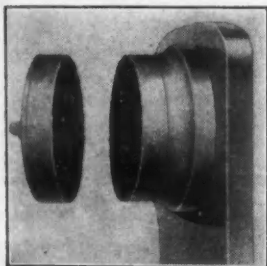
Eastern Bus Company Stretches Point Life to 75,000 Miles

Giving whole-hearted support to the war effort, an eastern bus company reports it is extending distributor contact point life to 75,000 miles. Periodic maintenance, based on a real understanding of the nature and function of contact points, makes this record possible.

Contact points are surfaced with "wafers" of tungsten, an extremely tough metal able to withstand heat and arcing. If properly adjusted for wear, points should continue to operate satisfactorily as long as a thin layer of tungsten remains.

Contact Points Self-Cleaning

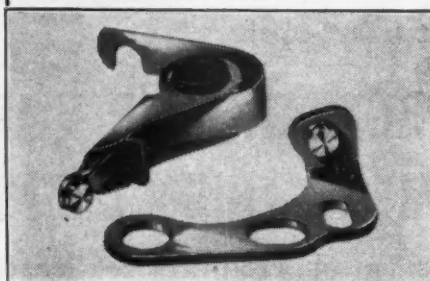
In normal operation, contact points become rough and tungsten oxide forms on the surfaces. This oxide flakes off, however, so that good contact is maintained. Beyond occasional adjustments for wear, and periodic checks to determine whether operating conditions are normal, very little service is required to get maximum point life.



Contact points roughen in normal service

ENGINEERS OUTLINE POINT CARE

Distributor Contact Points



Distributor contact points are surfaced with "wafers" of tungsten

Delco-Remy Service Engineers Warn Against Waste

A recent investigation revealed that in some instances points were being discarded with as much as two-thirds of the tungsten remaining. Delco-Remy Ignition Engineers point out that this is a serious and needless waste of tungsten, a highly critical material.

Delco-Remy "Good Ignition" Booklet Given Free

The Delco-Remy "Good Ignition" booklet, containing valuable information on the operation, checks and adjustments of ignition equipment, is available free on request. Write for your copy.

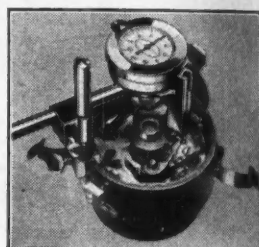


"Good Ignition" booklet free

Point Service Simple

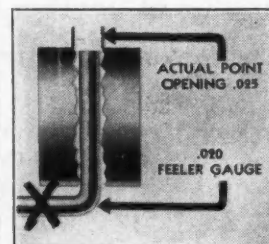
The point opening should be measured periodically with a dial

indicator or cam angle meter, and adjusted correctly. It cannot be measured accurately with a feeler gauge, since the points roughen in service. Spring lever tension should also be checked. Adjust by bending the breaker lever spring.



Dial indicator measures opening accurately

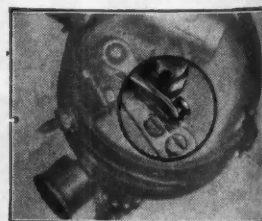
If points need cleaning, a few strokes with a fine-cut contact file to remove high spots, is all that is required. It is not necessary to remove all pits.



Feeler gauge inaccurate for used points

Abnormal Conditions Cause Rapid Point Wear

Weak or excessive spring tension, high voltage, excessive current, or oil on the points will cause rapid point wear. All of these conditions can be eliminated to lengthen point life and conserve critical tungsten.



Weak spring tension causes burning

Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

**WHEREVER WHEELS TURN
OR PROPELLERS SPIN**



Delco-Remy service parts are sold through independent distributors and United Motors Service branches located in all parts of the country.

PORUS ★ KROME

IS A COUSIN TO *Phylum Porifera*



Phylum Porifera is the marine animal that deposits sponges in the sea. Sponges are porous. Hold liquids.

PORUS-KROME is the process that deposits a very particular kind of chromium on bearing surfaces. It, too, is porous. Holds oil.

When chromium is applied to cylinder bores by the PORUS-KROME process, it provides an extremely hard-wearing surface filled with minute oil reservoirs. This assures vastly improved lubrication,

reduces wear on the cylinder, rings and ring grooves. Oil consumption is held constant. Power and efficiency are maintained at high levels. Engine overhaul is reduced.

These are the big reasons why PORUS-KROME is being used on an ever-increasing number of internal combustion engines for aircraft, motor ships, tanks and other piston-activated equipment. The reasons are explained more fully in our newest literature. Write for it.



PORUS ★ KROME

Multiplies Engine Life

VAN DER HORST CORPORATION OF AMERICA CLEVELAND, O.
CLEAN, N. Y.

TAKE A TIP FROM THE ARMY

**KEEP
OIL
CLEAN**



To keep your units rolling longer... take a tip from the Army. Keep oil clean.

Dirty oil ruins engines... dirty oil grinds away vital, often irreplaceable parts. Clean oil keeps engines healthy... prolongs engine life.

To keep oil clean, replace your units' oil filter elements *regularly*... every time the dip-stick shows dirt in the oil.

And when its time to change a filter element... the choice, of course, should be a genuine Purolator. Purolator elements have a proven record of removing dirt, dust, grit, sludge and other abrasives that get in oil. Purolators keep oil clean... keep engines feeling fit.

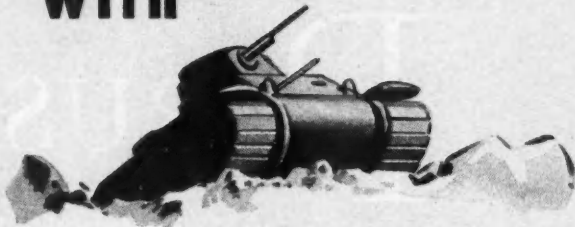
Always be sure it's a genuine Purolator you install. With so much at stake, you can't afford to take chances with less than the best. Purolator Products, Inc., Newark, N.J.—Founder and leader of the oil filter industry.

**KEEP IT CLEAN
with
PUROLATOR**



PUROLATOR
OIL FILTER
SERVICE

**Use the Battery
with**



**Staying
Power!**

Every time you use an Edison "Fighting Battery" you help both yourself and the war effort. You get a battery with the *staying power* to give long dependable wartime service.

And by using a better battery, you help conserve materials and essential manpower... Be sure always to practice a regular check-up procedure for all batteries, old and new!

BATTERY CHECK-UP PROCEDURE

See that—

1. Batteries in stock are given periodic freshening charges.
2. Batteries in service are checked every two weeks. With restricted wartime driving, batteries will need more recharging.
3. The proper size battery is on the job.
4. The water-level is maintained.
5. New batteries are fully charged before being installed in active service.

THOMAS A. EDISON, INC., Emark Division
Plant No. 1, Kearny, N. J.




a Yankee was a Hero then . . .



George Rogers Clark, the Hero of Vincennes, had the stuff heroes are made of! With a handfull of men, and starvation threatening them, he marched overland thru the "drowned lands of the Wabash" to reach Vincennes. After an all night fight, the fort was stormed and "old Vincennes" surrendered. Clark and his men had performed one of the greatest deeds in American history—the establishment of the Mississippi as the Western boundary of the United States!



TODAY'S HERO IS A  **TOO!**

To be a hero today, a STOP-AND-TAIL LAMP too, must have unbeatable heroic qualities. It must stand the "gaff" by day and work the night shift too. It must emerge from the day's work unbeaten and unbowed. It must serve each vehicle loyally and long and must repay your original investment many times over.

FUNDAMENTAL QUALITIES LIKE THESE DISTINGUISH YANKEE STOP-AND-TAIL LAMPS AMONG ALL OTHERS!

Fundamental qualities like these make Yankee STOP-AND-TAIL LAMPS, as well as Directional Signals, Reflex Reflectors, Rear View-Mirrors, Clearance, Marker and Identification Lights, preferred on every fighting front, both here and abroad!

No. 327 — Independently manufactured for replacement on Ford 1937 cars. Equipped with mounting and license plate bracket. The body of the lamp and the bracket are both finished black. Has window for license plate illumination.



No. 337 — Independently manufactured for replacement on Chevrolet 1937-38 cars. Constructed of heavy gauge material — with the body smartly finished in black. A top window permits license plate illumination.



Manufactured in accordance with regulations contained in WPB Order L-158 governing production of automotive replacement parts.

ALL YANKEE STOP-AND-TAIL LAMPS are equipped with Approved Reflex Lenses.

**YANKEE METAL PRODUCTS CORP.
NORWALK, CONN., U.S.A.**

FOR *Distinguished* SERVICE

YANKEE

AUTOMOTIVE
AND AVIATION
MIRRORS
REFLECTORS
LAMPS AND
SAFETY DEVICES

☆ ASK YOUR JOBBER OR WRITE DIRECT FOR PRICES AND DETAILED DESCRIPTIVE LITERATURE ☆



"PENNSYLVANIA TURNPIKES

Are Really Doing a Job for Us"

SHELL OIL COMPANY,
BIRMINGHAM, ALA.



SHELL OIL COMPANY
INCORPORATED
800 NORTH 28TH ST.
BIRMINGHAM, ALABAMA

March 26, 1943.

Lee-Rodgers Tire & Battery Company,
601 S. 20th St.,
Birmingham, Ala.

Gentlemen:

We were experiencing almost daily road delays due to blowouts, but since putting on Pennsylvanias we have been able to keep moving. We haul 3,600 gallons of gasoline from Mobile, 300 miles distant -- the gross load being 40,000 lbs. on ten tires.

During the summer months especially, a tire must have something different to stay on the trucks of our fleet. In Turnpikes you must have included materials other than sales talk, for these tires are really doing a job for us.

In addition to remarkable mileage from the original tread, we have been able to recap your tires. We have worn off the first recap and are ready now for the second. Frankly, we think a third will be in order.

It is a great pleasure to recommend Pennsylvania Turnpike Tires to truck operators.

Very truly yours,
SHELL OIL COMPANY

By *E. B. Sullivan*



FOR TREAD - AFTER - TREAD
RELIABILITY

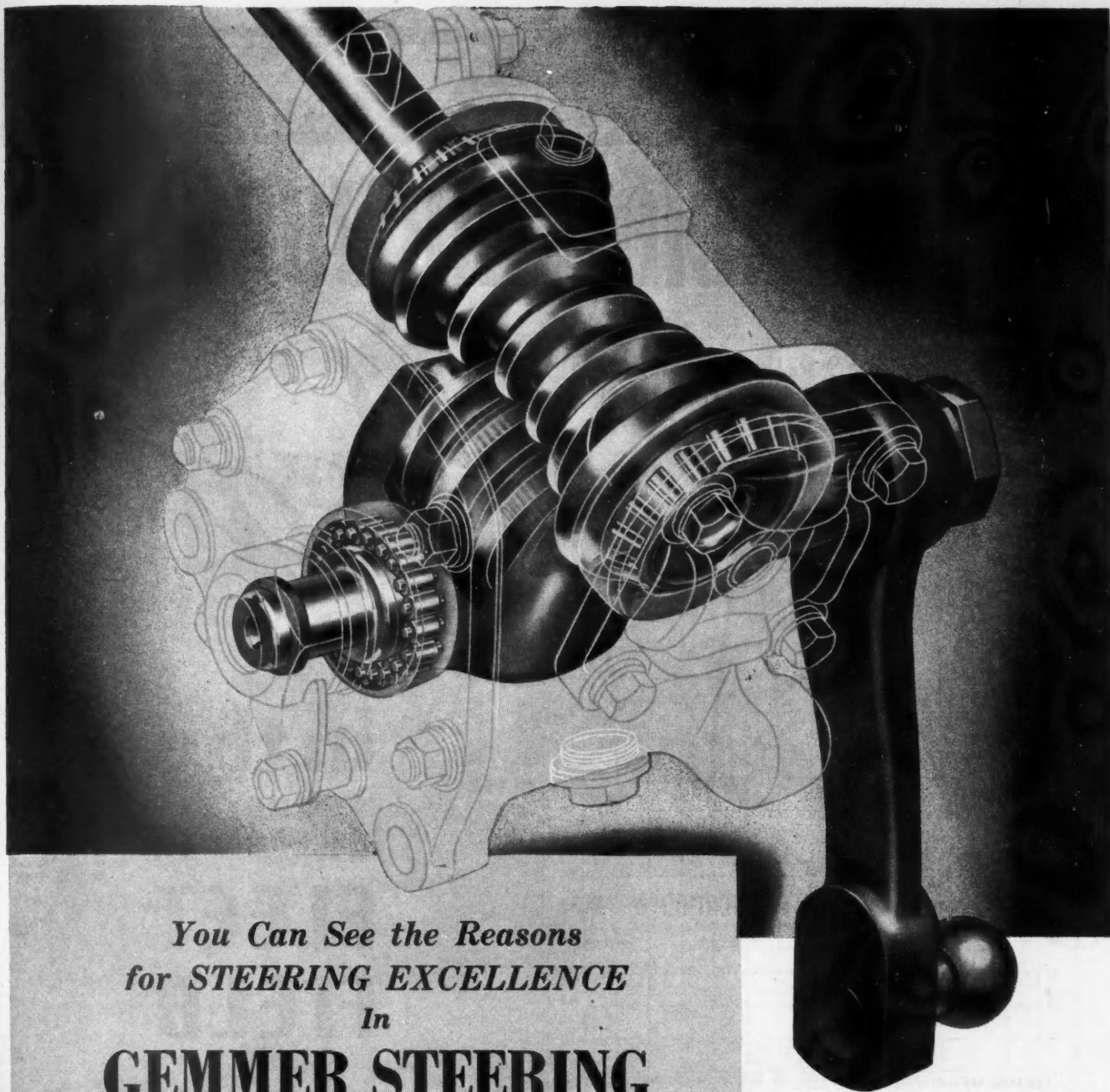
see your Pennsylvania Dealer, or Write
Direct to Pennsylvania Rubber Co.,
Dept. CCJ-8, Jeannette, Pennsylvania.

PENNSYLVANIA TIRES

MANUFACTURED BY THE
ORIGINATORS OF THE

Silent Vacuum Cup Tire

Pennsylvania is one of several associated companies operating the Copolymer Corporation at Baton Rouge, La., now producing synthetic rubber for the United States Government.



*You Can See the Reasons
for STEERING EXCELLENCE
In
GEMMER STEERING*

This phantom view of the Gemmer Steering Gear shows clearly the reasons for steering excellence.

THE BASIC DESIGN—an hour-glass worm engaging teeth that roll—provide highest efficiency—easiest transference of power. No sliding contact between teeth.

ANTIFRICTION BEARINGS at all critical points—particularly important to efficiency where motion is relatively slow.

STURDY—COMPACT—The close coupled design provides exceptional compactness—ease of installation—saving of weight without sacrifice of overall capacity or steering arm

angularity. Solid steel forgings provide abundant strength, durability—ample safety factor—internal stresses are low.

SIMPLICITY—just a few parts—nothing complex—nothing to get out of order or require frequent adjustment.

STABILITY—Inherent design banishes “lost motion” and reduces wear to the least possible minimum. Steering is always firm, response positive with absence of rubbery feeling and wander.

Gemmer Steering is demonstrating its worth in every type of automotive vehicle from the lightest

passenger cars to the heaviest buses and trucks—in the road-building machinery, agricultural tractor and marine fields.

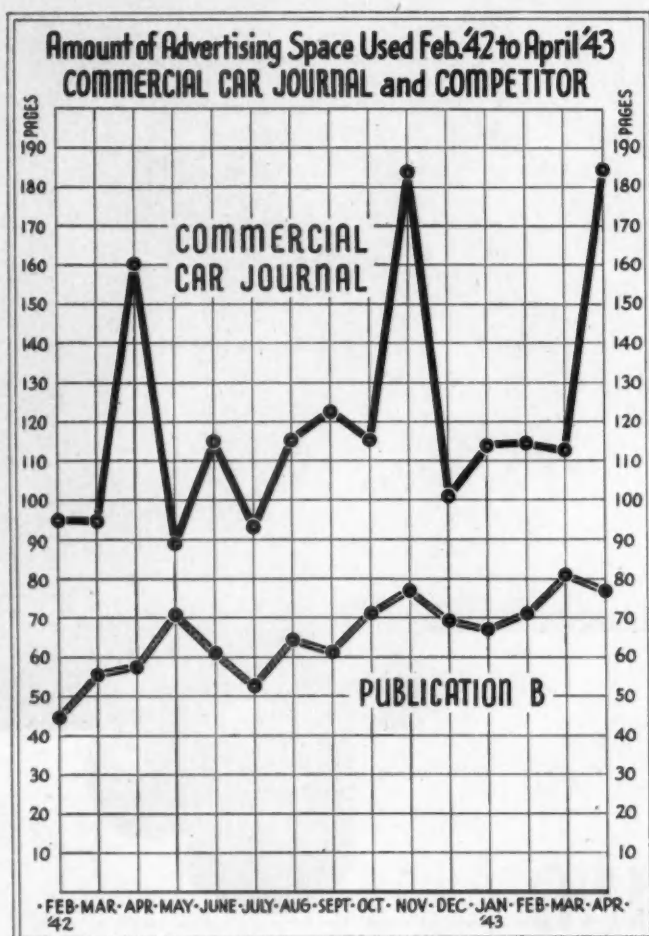
*Gemmer—Pioneer of
High Efficiency Steering*

**GEMMER
MANUFACTURING
COMPANY**

6400 MT. ELLIOTT AVE.
DETROIT, MICH.



COMMERCIAL CAR JOURNAL



Leads

in the TRUCK FLEET FIELD

COMMERCIAL CAR JOURNAL has the largest circulation in its field.

25,000 copies go into the shops of fleets with 8 or more trucks. This is the largest available truck fleet circulation.

Its plus circulation, over and above fleet coverage, goes to the truck trade.

Last year COMMERCIAL CAR JOURNAL carried nearly twice as much advertising as its nearest competitor—and editorially COMMERCIAL CAR JOURNAL has been the leader ever since it was founded, in 1911.



COMMERCIAL CAR JOURNAL

A CHILTON Publication • Chestnut and 56th Streets, Philadelphia, Pa.

"U. S." TRANSPORTATION MAINTENANCE IS GOOD BUSINESS NOW... and Always

Transportation Maintenance is not just a "war baby." It is a plan that hundreds of truck operators have found gives them for the first time the facts about their tire costs, saves them money by increasing tire mileage and, even more important, cuts down delays on the road. The "U. S." Transportation Maintenance Plan can do this job for you.



THIS POSTER, 15" x 18", in color, is one of a series on care of truck tires now available for posting in your garage where every employee can see it. It is a part of the "U. S." Transportation Maintenance Service. Call your "U. S." Truck Tire Distributor for your poster.

Why you need this Plan

There are four important reasons why you need "U. S." Transportation Maintenance on your fleet:

1. When the plan is operating, you will know exactly how every size and type of tire is doing. When to repair, recap, replace.
2. Your records will be complete and up-to-date, ready on time for any government reports required.
3. Delays due to tire failure can be cut as much as 50%, based on the experience of other truck operators.

4. A regular schedule of tire inspections for every truck will save the time of maintenance men and drivers.

There is no mystery about how this can be done. The plan has proved out over and over again with hundreds of successful operators. It makes no difference whether you operate three trucks, 300 trucks or even more, call your "U. S." Truck Tire Distributor today and have him lay this simple plan before you. It will pay you today... and it may help keep your business rolling... tomorrow.



UNITED STATES RUBBER COMPANY

Listen to the Philharmonic Symphony program over the CBS network, Sunday afternoon 3:00 to 4:30 E. W. T. Carl Van Doren and a guest star present an interlude of historical significance.

1230 Sixth Avenue • Rockefeller Center • New York



..Special Purpose

© 1943 Great American Industries, Inc., Meriden, Conn.

Military requirements called for hundreds of efficient pumpers—quickly—to combat all kinds of fires which might threaten stores and equipment.

As producers of fire apparatus for many years, it was natural that Ward LaFrance received the assignment. Standard truck chassis were converted into 500 gallon-per-minute pumpers, reinforced and equipped for their special job.

Ordinarily, it is preferable to design and build special trucks "from scratch". In this case it was practical to convert standard trucks to special-purpose use, because of the availability of the chassis units.

The moral is: When civilian motor truck purchases again become possible, put your *special* requirements up to Ward LaFrance. You'll get greater efficiency and longer useful life for every truck in your fleet. *Right now* is a good time to discuss your problems and future needs with Ward LaFrance engineers.

WARD LAFRANCE TRUCK DIVISION



ELMIRA, NEW YORK

WARD LAFRANCE



**GOOD NEWS FOR BUS
AND TRUCK OPERATORS**

DU PONT "ZEREX" IS RESERVED FOR YOU!

Current Orders of the War Production Board reserve the supply of ethylene glycol—non-evaporating type—anti-freeze for bus and truck use. This type of anti-freeze is best suited to heavy-duty requirements.

Du Pont "Zerex" is made from ethylene glycol. It is particularly well adapted for use in motor trucks, buses and stationary engines which operate at high engine temperatures. If your vehicles have to perform under heavy-duty conditions, by all means get "Zerex."

If the units you operate are light and the service requirements are not so severe, you will find Du Pont War Emergency "Zerone" gives protection.

Either way, you can rely upon Du Pont anti-freeze. Place your order now for Du Pont "Zerex" or War Emergency "Zerone."

**"ZEREX" GIVES YOU THESE BIG
ADVANTAGES. BE SAFE! BUY NOW!**

Lasts the year round—"Zerex" is non-evaporating. It won't boil away. One filling will last all winter in a tight cooling system.

Protects against freezing—"Zerex" can protect against freezing at lowest temperatures.

Protects against rust—"Zerex" keeps the cooling system free from the damaging effects of rust and corrosion. It is anti-acid. It will not attack aluminum cylinder heads, rubber hose and pump packings.



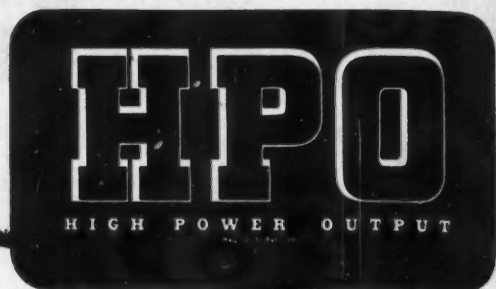
DU PONT "ZEREX" won't boil out. One filling will last all winter long. Non-evaporating, anti-acid and anti-rust. Same formula as last year. Retail price: \$2.65 a gallon.

DU PONT "WAR EMERGENCY ZERONE" has an ethanol base—gives satisfactory protection against freezing and rust at an economical price. Retail price: \$1.40 a gallon.

DU PONT "ZERONE" is made from a methanol base—not always available. Gives maximum protection against freezing and rust at minimum cost. Retail price: \$1.00 a gallon.

CHICAGO TO BOSTON — BOSTON TO OMAHA — OMAHA TO BOSTON

"MUCH BETTER" LUBRICATION with VALVOLINE



A. J. Nugent, Maintenance Superintendent of 70 heavy-duty refrigerated trucks, Safeway Truck Lines, Chicago, knows what he's talking about. He really picked a winner.

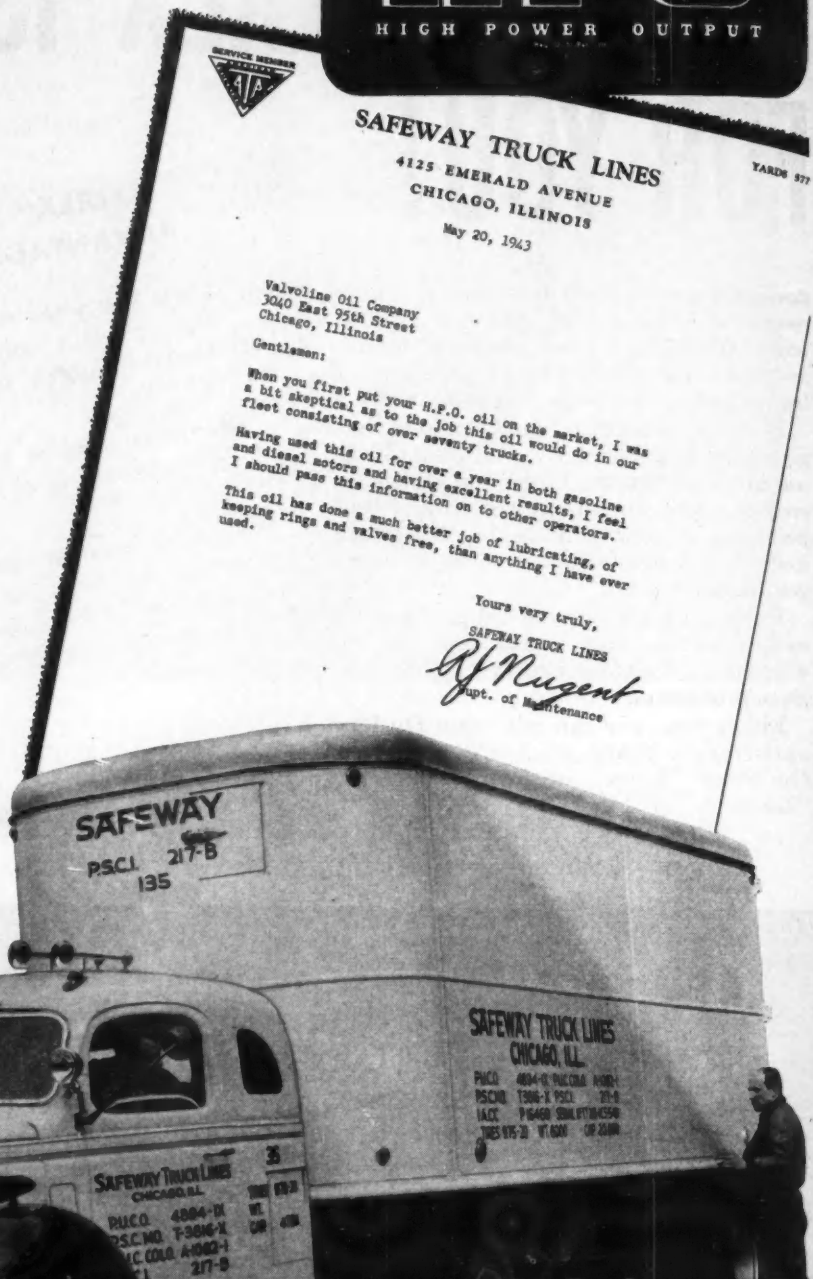
You see, HPO is a *Pennsylvania Oil*—the very top quality, 100% amber Appalachian crude, finest of them all for delivering a grand lubricating job, no matter how hot it gets under the hood on those extremely long runs.

Plus that, HPO is a *detergent* oil—it cleans as it lubricates! Trouble-making "varnish" never gets a chance to settle on your pistons, rings, or other engine parts, because HPO keeps "varnish" free and loose in the oil itself, where it can't get into mischief!

Investigate HPO. And while you're at it, ask about the money-saving features of Valvoline Fleet Laboratory Service. Write your nearest Valvoline office—*today*.

VALVOLINE OIL COMPANY

588 East Fifth Street, Cincinnati, Ohio
New York - Chicago - Atlanta - Los Angeles - Vancouver



SAVE MONEY — KEEP 'EM ROLLING

with VALVOLINE

The 1st Pennsylvania Oil

Studebaker produces for war



and builds for the future!

**The Wright Cyclone engines and
multiple-drive military trucks of today pave the way for the finer
Studebaker cars and trucks of tomorrow**

THE GREAT Studebaker factories right now are busy building large quantities of Wright Cyclone engines for the Boeing Flying Fortress—they're producing tens of thousands of big multiple-drive military trucks for the United Nations as well as other vital war matériel.

And out in the field, away from the Studebaker plants, Studebaker dealers are doing an essential war job by keeping the cars and trucks in their communities in sound operating condition.

They're giving their customers the full benefit of factory-devised plans for top quality car and truck care under today's operating conditions.

They're functioning as headquarters for information on government regulations furnished through Studebaker's Wartime Information Service for dealers.

They're helping to locate idle or part-time used

trucks for active service. They're building good will today that's bound to bring them real profits tomorrow.

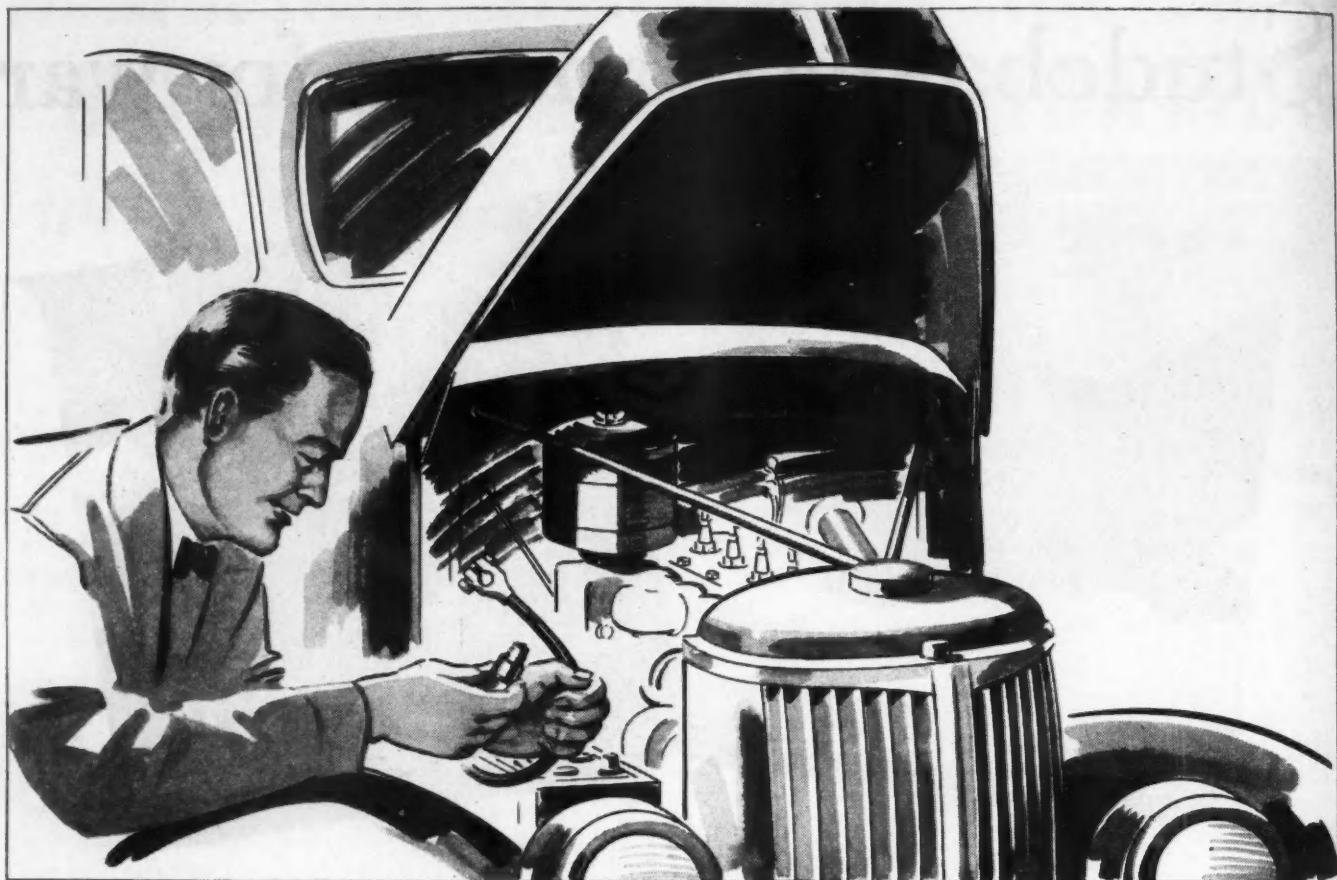
Except for men who have joined the armed services, the Studebaker field force has been kept intact.

In fact, Studebaker dealers in wartime are getting the same kind of helpful information and assistance that meant so much to them in sales and profits in peacetime.

It all adds up to this—when victory comes, the Studebaker franchise will rate at the top in every community—particularly with the highly competitive cars and trucks that Studebaker plans to build.

☆ Studebaker ☆

PIONEER AND PACEMAKER IN AUTOMOTIVE PROGRESS



How to get Low Cost per mile **BATTERY CABLE SERVICE** ...and Conserve Copper, too



Specify Belden
Battery Cables.



Available Belden Automotive Wire
and Cables are listed in the War
Edition of the Belden catalog.

When you see corrosion around a battery post, it means a poor connection and increased resistance which causes the voltage regulator to shut off the current, hence, the battery is starved. Corrosion eats away the cable connections—wasting vital war materials.

Keep terminals clean, especially the contact services. Help battery cables and battery to stay in service longer.

Cables that last longer conserve copper and other vital war materials. When replacements are necessary, specify Belden full size cable with long-life terminals. They assure low cost per mile, high conservation of essential metal.

Belden Manufacturing Company
4681 W. Van Buren St., Chicago 80, Illinois

Belden

WIRE

SPARK PLUG WIRES • BATTERY CABLES • PRIMARY WIRES

Big Operators Say --

GATES **BLACK** Truck Belt

Wears 50% to 80% Longer
Than **PRE-WAR** Truck Belts

Read This Letter

Here is a letter from Mr. A. A. Russ of Decatur Cartage Company, Chicago.

It tells just what big truck operators all over the United States are saying about the Gates Black Truck Belt.

Mr. Russ has direct charge of keeping Decatur's 200 big trucks moving and earning revenue every minute that is humanly possible.

He knows that one truck idle only 15 minutes for belt servicing will disrupt schedules and cause trouble that can cost his company many times the value of a dozen belts.

"We must keep 200 trucks rolling without lost time. Gates 'T' Series of Black Belts have played an important part . . . they are giving many more miles of service and we have never had to make a road service call due to belt failure."

Decatur Cartage Co.
A. A. Russ, Garage Supt.



Specially Engineered
for Heavy Duty TRUCK
and Coach Service

Look for the letter "T" on the belt label. "T" is for "Truck" and means that this Gates Black Truck belt has been specially engineered for heavy-duty truck and coach service.



Keep Your Trucks Rolling— Less "Time Out" for Servicing!

Notice particularly that Mr. Russ says, "Since using the Gates BLACK Truck Belt we have never had to make a road service call due to belt failure."

That is what is important in a truck belt these days when a truck's hauling minutes are precious beyond price.

No wonder big fleet operators are glad to recommend the Gates Black Truck Belt. They find, from

their actual records, that the Gates Black Belt is giving fully 50% to 80% longer wear than any PRE-WAR belt they ever used.

Many of them say, just like Mr. Russ, that they have never had a single road delay due to belt trouble since they began using the Gates Black Belt.

If you feel that keeping your units rolling without trouble and without lost time is really important, look into the record of the Gates Black Truck Belt today. Phone your jobber while the matter is in mind. Tell him you want to know all about the Gates Black Truck Belt right now.

5 Years of Unrivalled **EXPERIENCE** with Synthetic Rubbers

Gates has probably had more experience—and more successful experience—with synthetic rubbers than any other rubber company in the United States. For five years, Gates has been making thousands upon thousands of belts of a special synthetic rubber that, under severe heat and oil conditions, actually outwears natural rubber by as much as two to one! This is your assurance that, as synthetic rubbers become more and more widely used, Gates is in position to see that you continue to get truck belts of truly superior quality.

Jobbers NOW Have Complete Stocks of
Gates *Series T* Black Truck Belts

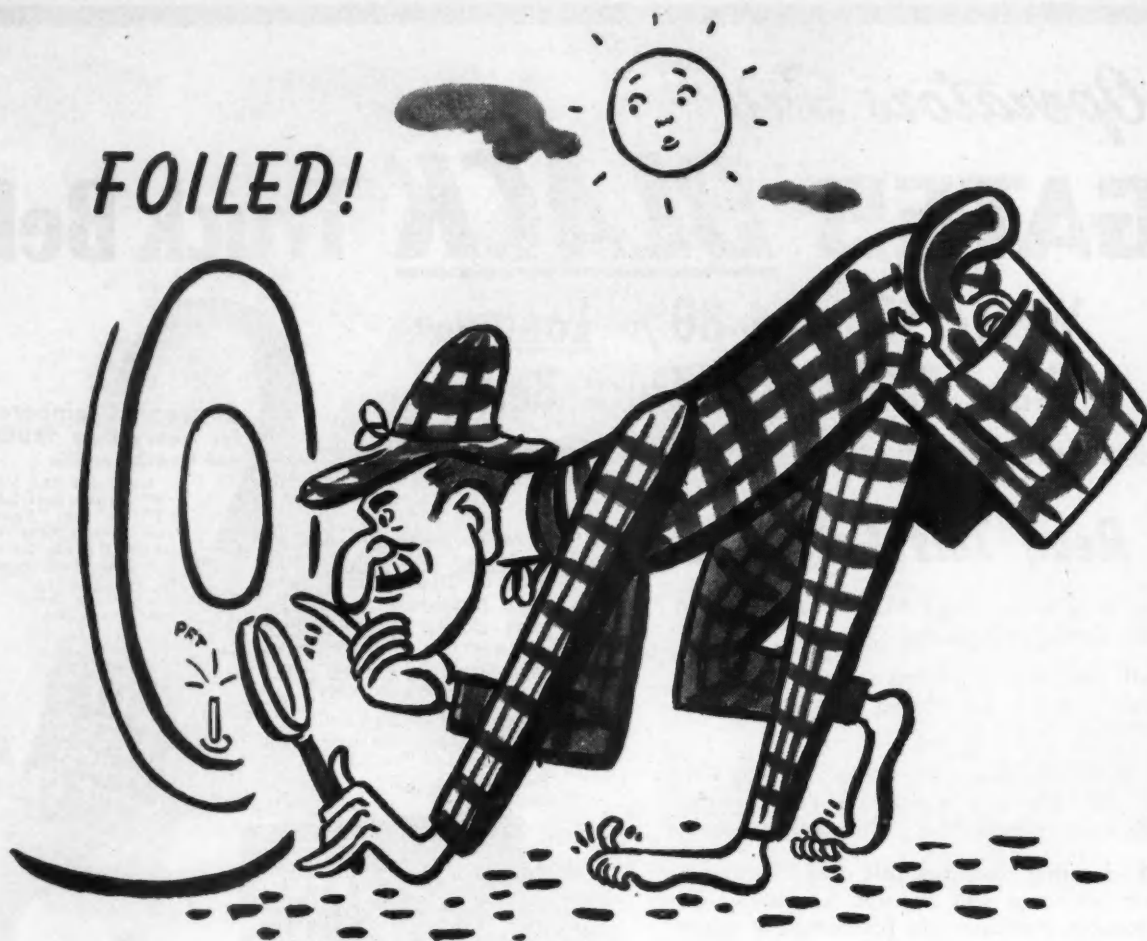
THE GATES RUBBER COMPANY

DENVER, U. S. A.

World's Largest Makers of V-Belts

T433

FOILED!



TIRE MILEAGE WASTERS

Little things steal miles. Little things like missing valve caps, incorrect pressures, tread cuts, carcass breaks, leaky tubes, worn flaps.

Your Fisk Truck Tire Distributor can help you lock up some of these tire mileage wasters. He's an expert in s-t-r-e-t-c-h-i-n-g the most mileage out of tires. His reputation is built on thorough tire service. The Fisk War Necessity Service has saved thousands of transportation hours—hours that may spell the difference between "Delivered—on time!" and "Too Little—too Late!"



Ask your Fisk Distributor about this time-saving, rubber-saving plan. And whether it's time to repair, time to recap or "Time to Re-Tire," follow the sign of the Fisk Boy.



TIME TO RE-TIRE
REG. U. S. PAT. OFF.

SEE YOUR

FISK

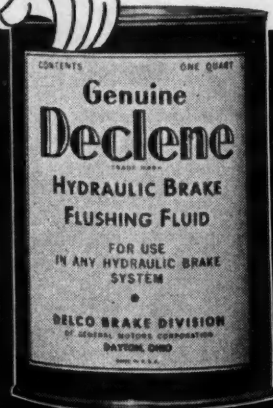
TIRE DISTRIBUTOR

FISK TIRES Division of United States Rubber Company



Joe Brakeservice says—

CHECKING THE HYDRAULIC SYSTEM



is an important part of every reline job

No matter how good a reline job your maintenance crew does, there will still be driver complaints if the hydraulic system is faulty. The world's best reline job can't carry a hydraulic system that is gummed up, low on fluid, or that contains air in the lines.

Here's the procedure that leading fleets are following: Flush dirty, deteriorated brake fluid from the system with Declene—a high-grade flushing fluid developed

by Delco engineers especially for this tough cleaning job. Refill with Delco Super 9 brake fluid. Delco Super 9 has unique chemical characteristics which make it entirely safe for rubber and metal parts, insure positive brake action over a wide temperature range, and prevent gumming-up of pistons and cylinders.



Delco Super 9, Declene and Delco Brake replacement parts are distributed by United Motors Service and Bendix distributors.



"... for high achievement in the production of war equipment."

Delco

BRAKE-MORaine PRODUCTS
DIVISION OF GENERAL MOTORS CORPORATION

STANDARD FOR EQUIPMENT—THE STANDARD FOR REPLACEMENT

More Thornton FOR ALASKA

FOUR-
REAR-
WHEEL

Drives

WILL HANDLE
VITAL TRAFFIC OVER
AMERICA'S BURMA ROAD



THORNTON
Four-Rear-
Wheel DRIVE
unit which
doubles original
truck capacity
and provides
tremendous
tractive ability.



AMERICA'S eyes are concentrated on the North Pacific. A vital supply line is the traffic-laden Alcan Highway, opened last season.

Proven by brilliant performance during the construction of the road were hundreds of trucks equipped with THORNTON Four-rear-wheel DRIVES.

This fine service record has re-

sulted in more than 750 additional trucks being put into service, this season, to do another spectacular job on America's road to Tokyo.

By means of THORNTON equipment, the original capacity of these dump-body trucks has been raised from $2\frac{1}{2}$ to 4 yards. The tractive ability, with two driving axles under the load instead of one, has been immeasurably increased.

THORNTON TANDEM CO.

8701-8779 GRINNELL AVE.

DETROIT, MICH.

Manufacturers also of the THORNTON automatic-locking DIFFERENTIAL

"When you need TRACTION you need THORNTON"

YOU CAN'T AFFORD
Fuel Feed
Failures
... THE EASY, SURE
REMEDY IS HERE .

EVERY truck is a soldier with a multi-ton pack. . . . Autopulse, the UNIVERSAL pump, will help you keep essential vehicles rolling by doing an unfailing, trouble-free fuel supply job with maximum fuel economy.



NO MORE WASTED FUEL

Mounted away from the motor, Autopulse supplies cool fuel in contrast to motor mounted camshaft pumps that deliver fuel so heated that 10% to 15% often escapes through the carburetor vent in the form of vapor.

NO MORE VAPOR LOCK

The vapor lock that stalls motors when ENGINE MOUNTED PUMPS SUCK BUBBLES is eliminated with Autopulse, since it can be mounted in a cool place where it PUSHES FUEL in a solid steady stream.

PROMPT SERVICE

Autopulse can be installed to replace any fuel pump or fuel-supply system. It is the UNIVERSAL pump. Don't let fuel pump shortage or delay hold up your jobs. Switch to Autopulse.

Yes! . . . despite war

orders . . . you can get GOOD DELIVERIES for essential vehicles. Act now—Wire if you do not know your local wholesaler.

AUTOPULSE CORP. • DETROIT

AUTOPULSE *Electric Fuel Pump*

... CONSERVE YOUR TRUCK COVERS



TODAY is a day of conservation . . . a day when materials must be made to last. If you are using covers made from Mt. VERNON Extra duck you are fortunate. They will give you the longest possible wear, for Mt. VERNON Extra fabrics are tough and sturdy fabrics. They are made from top qualities of cotton and are woven to a high degree of uniformity. This insures maximum, uniform strength and uniform wearing qualities throughout all areas. Their straight, even selvages make covers that fit — with seams that neither bulge nor sag. For truck covers that fit and last, specify Mt. VERNON Extra cotton duck.

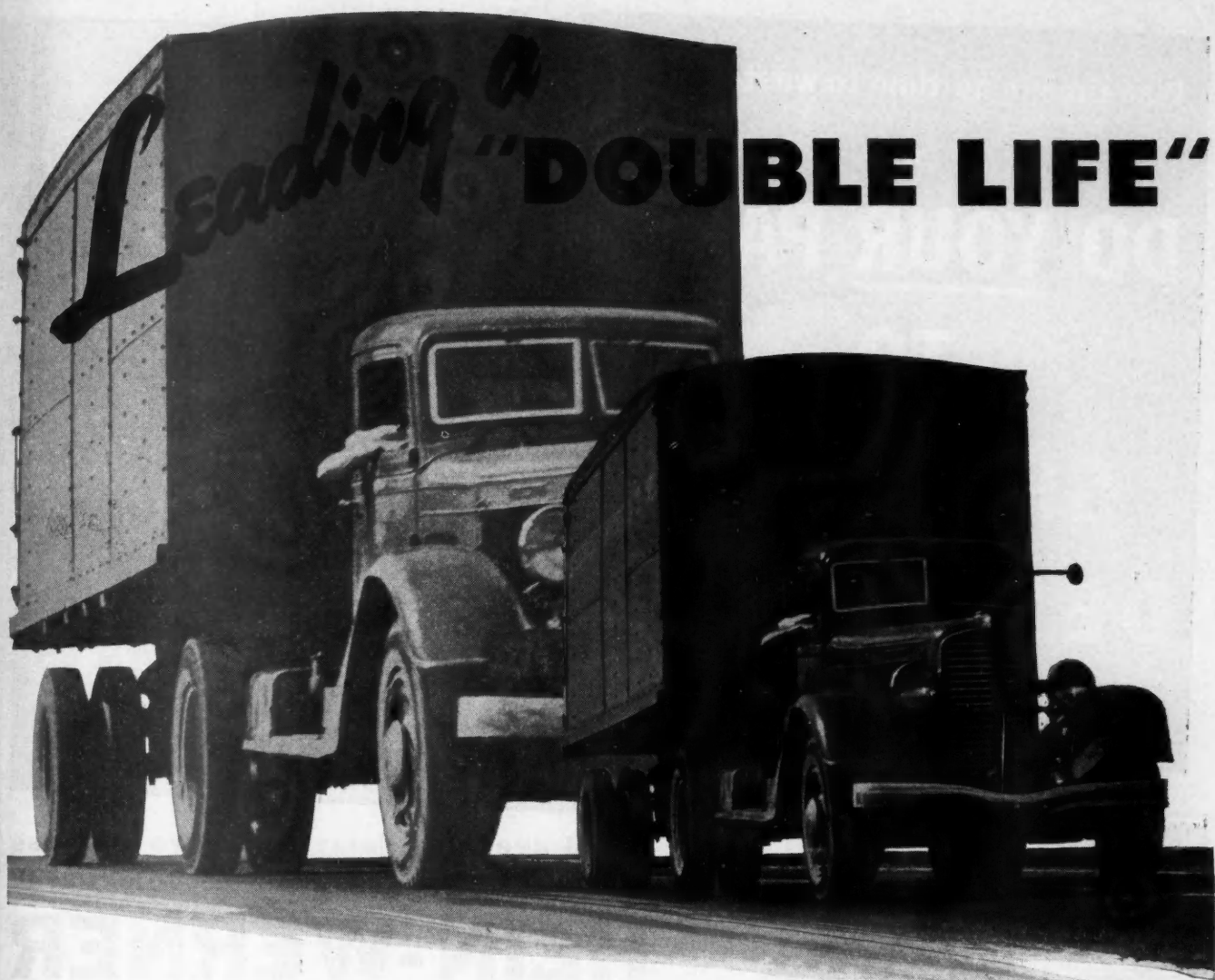
**MT. VERNON
WOODBERRY
MILLS, INC.**

TURNER HALSEY COMPANY

Selling Agents

40 WORTH STREET * NEW YORK, N. Y.

CHICAGO • NEW ORLEANS • ATLANTA • BALTIMORE • BOSTON • LOS ANGELES • SAN FRANCISCO



Trucks leading a "double life!" Why not? They must last twice as long, today.

Your trucks can lead that kind of life if they are *correctly* lubricated at the proper intervals... as indicated by the Sinclair Preventive Maintenance Plan.

This complete Plan, including Preventive Maintenance Records and Sinclair Lubrication Charts for every type of truck you operate, is yours for the asking. It is a guide to *safe* lubrication with *correct* lubricants for avoidance of excessive wear and breakdown.

Write or phone the nearest Sinclair Office or Agency for Preventive Maintenance material and advice about lubrication that keeps trucks standing up.

SINCLAIR AUTOMOTIVE OILS

SINCLAIR REFINING COMPANY (INC.), 10 WEST 51st STREET, NEW YORK CITY • 2540 WEST CERMAK ROAD, CHICAGO
 RIALTO-BUILDING, KANSAS CITY • 573 WEST PEACHTREE STREET, ATLANTA • FAIR BUILDING, FORT WORTH

War time is no time to waste time

★
DO YOUR PART
TO
SPEED UP
DELIVERIES
★



Model 20.10A

Avoid needless delay when tire changes are necessary . . . Equip your trucks with

HEIN-WERNER HYDRAULIC JACKS

Time is an important factor in winning the war—and every minute saved in changing a tire may save hours and days in the completion of a war material order.

A driver never knows when he may have to change a tire—but when the emergency comes—it pays to have a super-powerful, fast, easy-operating Hein-Werner Hydraulic Jack in the tool kit.

H-W Jacks are available in models of 3, 5, 8, 12 and 20 tons capacity.

For details and latest prices, ask your H-W jobber, or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

**HEIN-WERNER
HYDRAULIC JACKS**
Are Built Right and Priced Right

Keep 'em Rolling



Wartime Transportation is vital! No matter what the load, it must go through on schedule. Good vision through finer glass is essential to safer and more prompt delivery.

Good Safety Glass Essential to Motor Transport

From the driver's standpoint, good safety glass is important to vision—on long hauls or short runs. To the owners, good glass is an important investment in safer operation. To bus passengers, it is important to comfort and greater safety.

We salute every phase of the Transportation Industry for their splendid wartime record in moving freight and passengers with a minimum of delay and inconvenience. Drivers, management and handlers, each with difficult problems, have all done their share in this effort.

Keeping equipment in good condition is

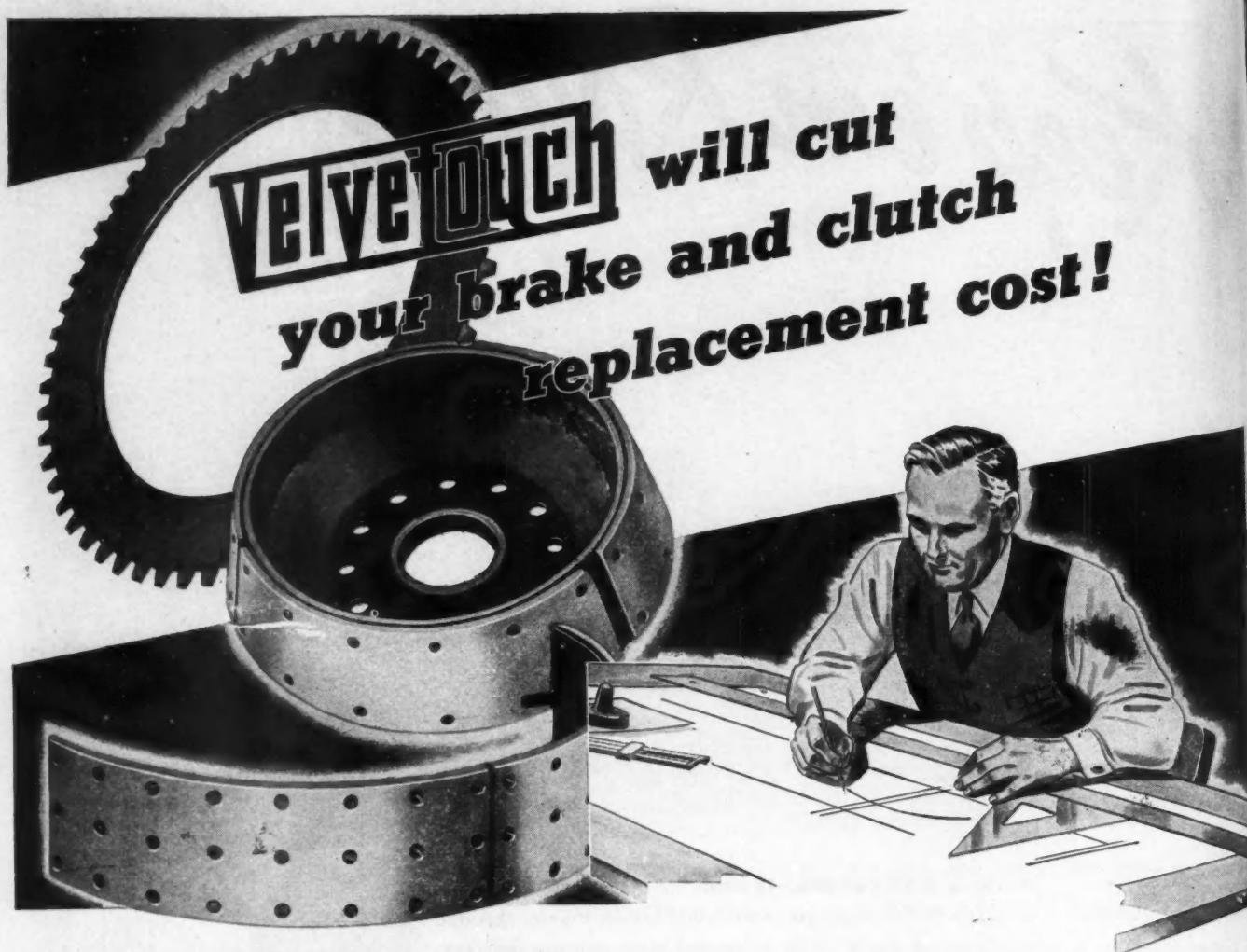
more important now than ever before. We suggest that this is the time to replace cracked, discolored and defective glass—in the interests of greater safety—with genuine Libbey-Owens-Ford Safety Glass for clearer vision windshields and windows.

There is an authorized L·O·F Safety Plate Glass Replacement Shop near you. Or, if you do your own glazing, your L·O·F Distributor will co-operate in keeping up your replacement stock. Libbey-Owens-Ford Glass Company, 7783 Nicholas Building, Toledo 3, Ohio.



LIBBEY·OWENS·FORD

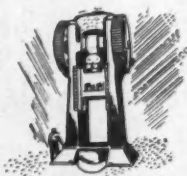
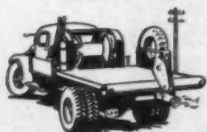
A GREAT NAME IN *Glass*



VELVETOUCH is an all-metal friction material—a combination of sintered powdered metals, welded to a solid steel backing. It is engineered to wear many times longer than ordinary clutch facings and brake linings . . . requires fewer adjustments and replacements.

In operation, Velvetouch is smooth and positive. It is not affected by oil, heat or water. Clutches and brakes equipped with Velvetouch never chatter, never slip.

Specify Velvetouch for your clutches and brakes! This modern friction material will keep your trucks out of the shop and on the job . . . will quickly show savings in brake and clutch maintenance costs.



TRADE MARK REG U S PAT OFF.

Velvetouch

THE S. K. WELLMAN CO.

1374 EAST 51ST STREET
CLEVELAND, OHIO, U.S.A.

PIONEERS IN PUTTING POWDER METALLURGY TO WORK FOR INDUSTRY

Look In Your Own Garage For the EXTRA Trucks You Need!

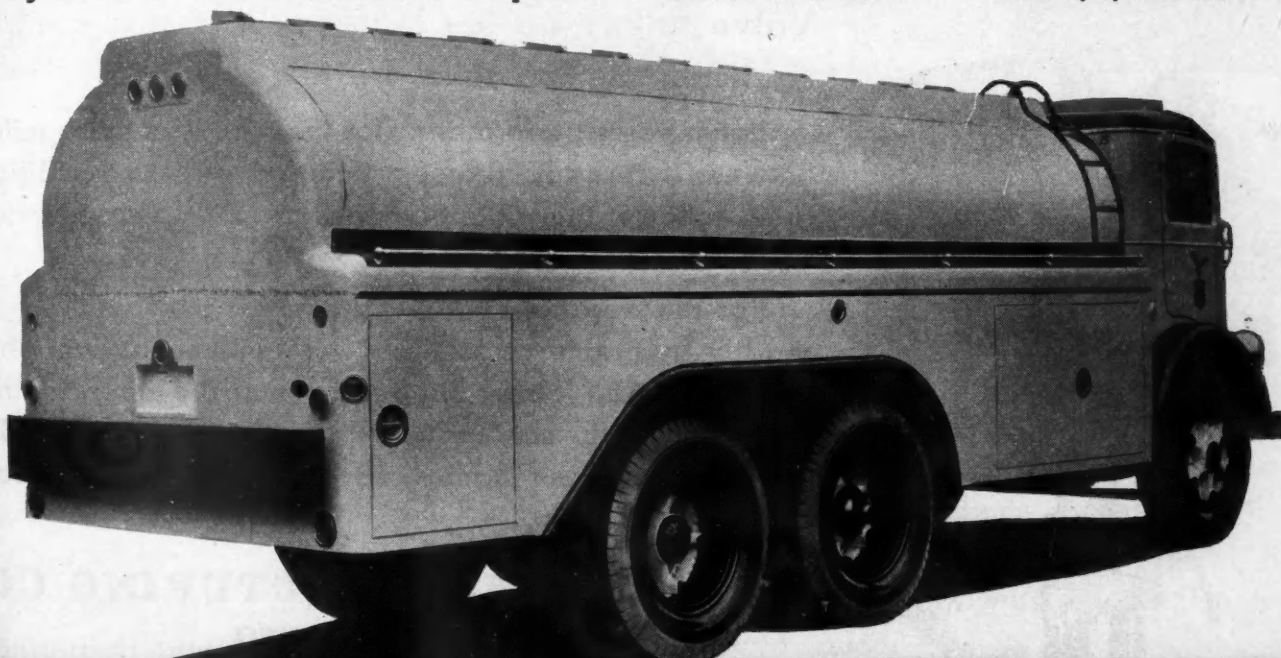
Before petitioning the Ration Board for "hard-to-get" new trucks, consider converting your 4-Wheel trucks into single-unit 6-Wheelers. A Trucktor 6-Wheeler can double the payload of your 4-Wheel trucks. Because these installations save most of the materials and manpower new trucks require, they are looked upon favorably by Ration Boards and will usually speed approval of your application.

The single unit 6-Wheeler is not merely the solution to a war problem, but definitely a type that will be much more widely used in the post-war period. Government impact tests prove that 6-Wheelers are easier on the road—consequently easier on the truck. Increased safety, too, is borne out by the low accident rate of 6-Wheelers, according to the I. C. C. and insurance companies.



General use by the Army, together with increased use by industry, is convincing evidence that the 6-Wheeler is a practical, rugged and highly maneuverable vehicle. Ask for complete details regarding conversion today.

THE TRUCKTOR CORPORATION
156 WILSON AVENUE NEWARK, 5, NEW JERSEY



Trucktor THIRD AXLES

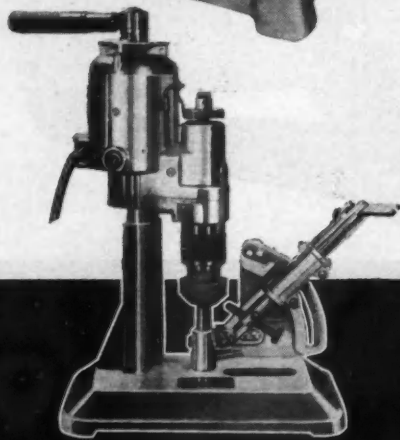
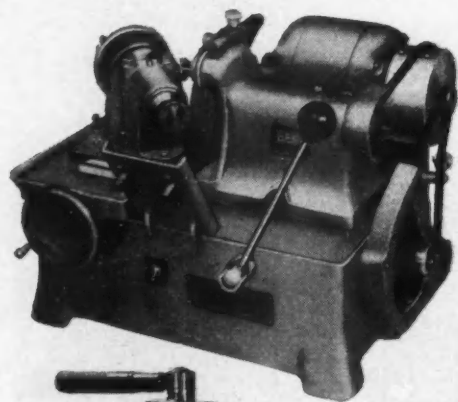


Valve failure on the highway is costly; doubly so when the job must be towed in.

Better valve performance for thousands of extra miles between overhauls and elimination of such road-side grief follows the adoption of HALL Valve Service Equipment.

For the duration, HALL Equipment may not be as readily available as we both would like but probably there's a HALL Jobber Shop near you able to render this superior valve service promptly and economically. Write us today for name and address of your nearest HALL Jobber Shop.

THE HALL MANUFACTURING CO.
TOLEDO 7, OHIO



HALL



LINCOLN LUBRICATING EQUIPMENT provides the type of lubrication service required to keep war-time transportation rolling

We know that it isn't necessary to sell you on the importance of keeping automotive vehicles "on the beam." Expert lubrication service prolongs their life and keeps 'em rolling longer.

However, you may not know that a limited choice of Lincoln Lubricating

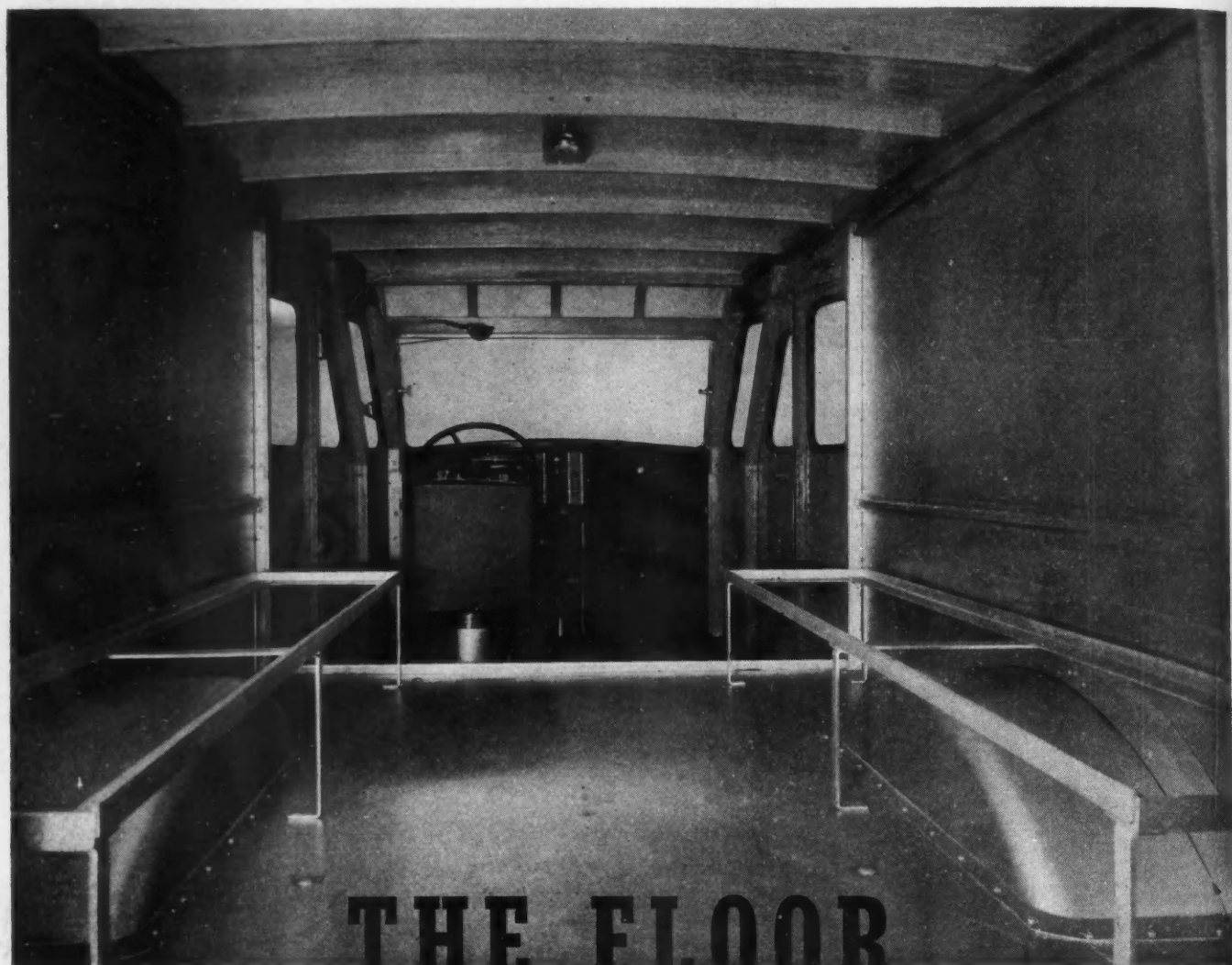
Equipment fabricated prior to government restrictions are available subject to prior sale, and subject to compliance with government regulations. We suggest that you consult your Lincoln jobber now. He may have or know where to obtain just what you need.



LINCOLN ENGINEERING COMPANY

Pioneer Builders of Engineered Lubricating Equipment

ST. LOUIS, MO., U. S. A.



THE FLOOR

That Puts a Ceiling Over Costs

● Many a truck and trailer in operation today is saving its owner money through weight-saving Haskellite materials.

One very successful application is PHEMALOID for floors. Stiff enough to permit the use of fewer framing members . . . strong enough to permit a thinner . . . and therefore lighter floor, PHEMALOID is a

factor in saving gas and tires and increasing payloads.

But there are more than operating savings in the PHEMALOID story. Availability in sizes large enough to cover a whole floor with a single dustproof piece . . . easy fabrication . . . resistance to moisture . . . these are points to bear in mind when planning the truck or bus body of the future.

HASKELITE MANUFACTURING CORPORATION
GRAND RAPIDS 6, MICHIGAN
 DETROIT, MICHIGAN • CHICAGO, ILLINOIS • NEW YORK CITY

HASKELITE

Plymett

Phemaloid

10,400 Gallons on 26 McCREARY TIRES-



WHAT AN IMPORTANT LOAD IN THESE WAR DAYS!

McCREARY TIRES are designed and built to meet recappers' requirements, so it's not surprising that a large percentage of McCREARY TIRES are distributed through the recappers. This is an open invitation for recappers to write for an advantageous proposition. Do it today!

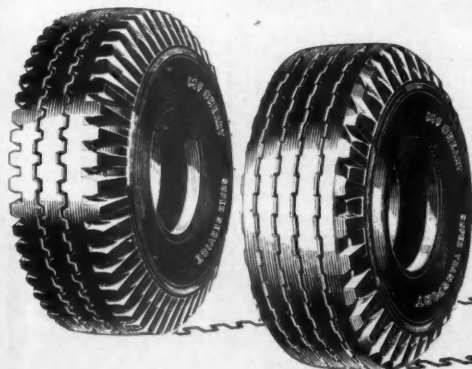
One of the biggest petroleum fleets in the country is Refiners Transport and Terminal Corporation, with headquarters in Detroit. This one company hauled 1,997,409 tons of fuel in 1942, and its vehicles traveled a total of 10,661,323 miles. An even greater tonnage and mileage is being recorded in 1943.

A large percentage of the Refiners fleet rolls on McCREARY TIRES. The reason? Mr. Charles Yocum, Vice-President, gives it — *"More ton-miles for less tire expense — more recaps per casing — more miles on every recap."*

There are positive, *built-in* reasons why McCREARY TIRES stand up better on fleets such as this. Bibb heat-resisting cord, superior bead construction and improved cord insulation are just a few of these reasons . . . all resulting in a cooler-running tire.

McCREARY TIRE & RUBBER COMPANY

INDIANA, PENNA.



McCREARY

"Built for Longer Service"

TIRES

**CHAIN, too,
is at war**



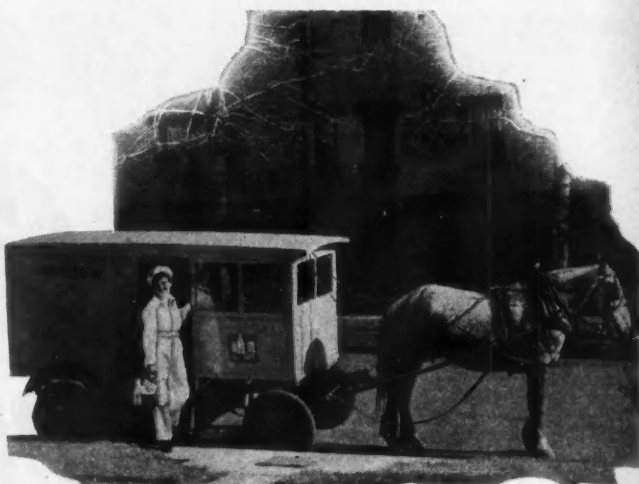
PEEPS "out of action" can't win battles. Towing equipment must be tough. Ready to do its job quickly—without fail! ★ ★ International Chain is doing many tough war jobs. ★ ★ International makes chain for every essential need—industrial, marine, farm, or tire. ★ ★ Campbell Lug-Reinforced tire chains assure positive protection and greater chain mileage to the units of your fleet. Write for details of this radically different* tire chain.

International Chain and Mfg. Co.
York, Penna.



*U.S. Pat. No. 2,093,547—
Canadian Pat. No. 223,568

INTERNATIONAL CHAIN



Don't horse around with **HAND PAINTING**

The gas shortage may force Ol' Dobbin back into harness . . . and the manpower shortage put women folks on the delivery job . . . but your equipment can still be decorated in the modern, streamlined way with Meyercord Truck Decals. Look at your trucks . . . everybody else does. . . Do they need re-decorating? Careful truck grooming and decoration is good business . . . and excellent advertising. Cash in on the free advertising space on your truck panels. You can still get reasonable deliveries on genuine, weather-tested Meyercord truck Decals for lettering, product reproduction, pictorials and trademark replacement. Meyercord "over-night" speedline application saves labor, money and idle truck time. Free designing service. Let us send you complete information. Address Department 1188.



(Photos courtesy of
Beatrice Creamery Co. and Hender Creamery)

TRUCK SIDE PANELS SELL WAR BONDS

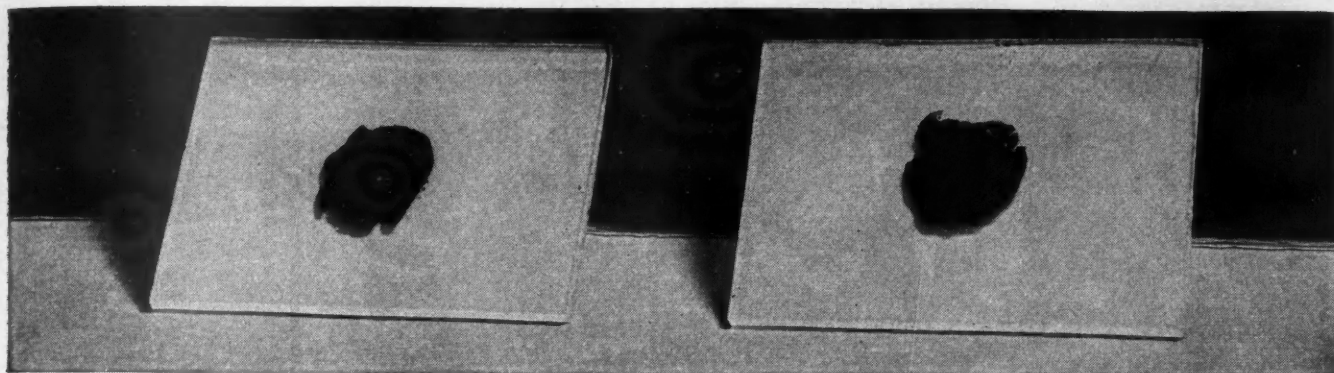
Enlist your trucks
in the national
war effort. Write
us for full details.



WEATHER • TIME AND TORTURE-TESTED
MEYERCORD DECALS
THE MEYERCORD CO., 5323 W. Lake St., Chicago, Ill.

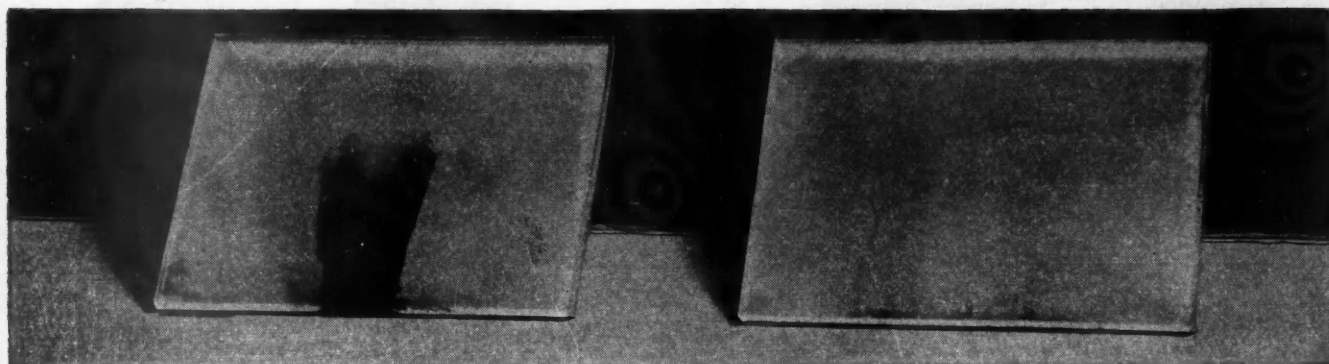
Here's why Cisco Solvent Flushes *CLEANER, FASTER*

than ordinary flushing oils now in use!



1. TO TEST the cleansing efficiency of Cisco Solvent against the cleansing efficiency of the average flushing oil, two

glass panes (pictured above) were coated heavily with dirty lubricants removed from a truck transmission.



2. ON ONE of these panes, a quart of a well-known standard brand of flushing oil was poured. The result is shown above. Only part of the grease was washed away. The rest remained intact on the glass.

ON THE OTHER, a quart of Cisco Solvent was poured—and the grease was dissolved immediately. In engines, transmissions, differentials, Cisco Solvent works the same way—*faster, more efficiently!*

Order Cisco Solvent from your nearest Cities Service office or write to Cities Service Oil Company, Room 1690, Sixty Wall Tower, New York 5, N. Y.



CISCO SOLVENT REMOVES

sludge, varnish, gum, dirt and metallic particles; frees engines; reduces friction losses; clears oil lines; improves compression and lubrication.



★ ★ OIL IS AMMUNITION — USE IT WISELY! ★ ★

THE EXECUTIVE WHO STOPS TO THINK . . .



Knows that "10% for War Bonds isn't enough these days"

Workers' Living Costs going up . . . and Income and Victory Tax now deducted at source for thousands of workers . . .

Check! You're perfectly right . . . but all these burdens are more than balanced by *much higher FAMILY INCOMES* for most of your workers!

Millions of new workers have entered the picture. Millions of women who never worked before. Millions of others who never began to earn what they are getting today!

A 10% Pay-Roll Allotment for War Bonds from the wages of the family bread-winner is one thing—a 10% Pay-Roll Allotment from each of several workers in the same family is quite another matter! Why, in many such cases, it could well be jacked up to 30%—50% or even more of the family's new money!

That's why the Treasury Department now urges you to revise your War Bond thinking—and your War Bond selling—on the basis of family incomes. The current

War Bond campaign is built around the family unit—and labor-management sales programs should be revised accordingly.

For details get in touch with your local War Savings Staff which will supply you with all necessary material for the proper presentation of the new plan.

Last year's bonds got us started—*this year's bonds are to win!* So let's all raise our sights, and get going. If we all pull together, we'll put it over with a bang!

you've done your bit



. . . now do your best!



THIS *FREE* BOOKLET WILL HELP YOU *NOW* ...and after peace comes!

Here are the facts to help you picture *your* part in our all-out war effort and in Tomorrow's transportation when peace comes.

LOGISTICS means "getting the right men and the right materials to the right place at the right time"—and that's *your* business today and tomorrow.

A truck-trailer loading in Cleveland or Des Moines is part of the strategy of Victory. "Too little, too late" is being erased by well-planned transport. And all this has a bearing on *your* future. The peacetime expansion of the United States will depend upon a highly integrated, closely allied transportation system. The men who will develop this system—you and your co-workers—will look to the "Logistics" of World War II as a guide.

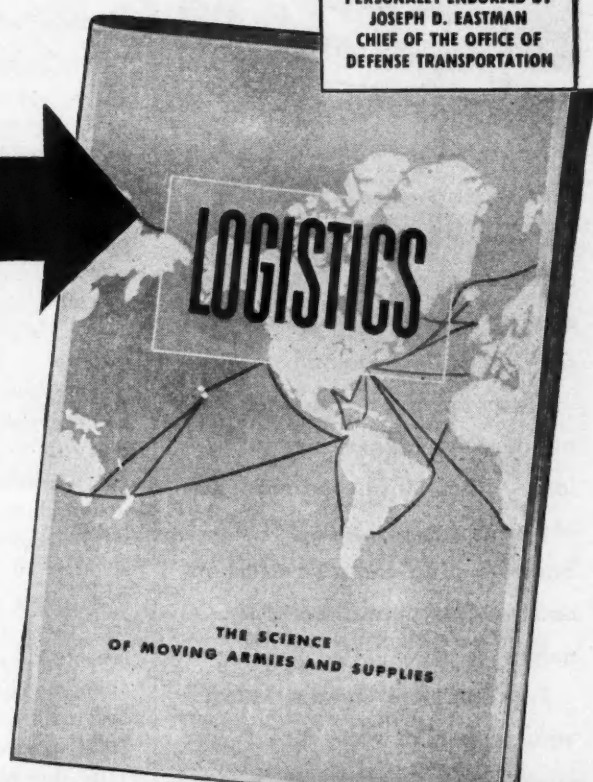
Whatever your job may be in transportation, write for this booklet today. It will help you understand the whole transportation side of the war picture—and where you fit in. And it will help you make a greater contribution to transportation expansion when the war is over. Send for it NOW! It's FREE!



TRAILMOBILE

COMMERCIAL TRAILERS FOR WAR AND PEACE

PERSONALLY ENDORSED BY
JOSEPH D. EASTMAN
CHIEF OF THE OFFICE OF
DEFENSE TRANSPORTATION



THE TRAILER COMPANY OF AMERICA

Cincinnati, Ohio Branches in Principal Cities

ATTENTION! ALL TRANSPORTATION MEN!
See how your job is part of the greatest transportation system ever conceived. Send for your *free* copy of "Logistics—the Science of Moving Armies and Supplies."

Name _____

Company _____

Address _____

Cold-Weld YOUR Cracked BLOCKS & HEADS BY THE K&W METHOD

**EVERY REPAIR
GUARANTEED**
*for the life
of the motor*

Any motor, new or old—L-Head or overhead—steam or marine—gasoline or diesel—can be quickly and *permanently* restored to service by this fully guaranteed *Cold Welding Method*.

Fleets, railroads, and motor rebuilders everywhere use it regularly—testify to the permanency of K & W repairs, many of which have stood up under severest operating conditions for 200,000 miles.

For complete details, consult your jobber, or write direct.

Note—Operators who maintain their own shops can obtain a license under K & W patents to handle their own repairs. Mechanics of licensees are trained by K & W without cost.

KERKLING

& COMPANY, INC. • BLOOMINGTON, IND.

West Coast Office and Repair Station
6516 Selma Avenue, Hollywood, California

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 36)

ODT conservation orders. In fact, only sharp-eyed operators detected the omission of the 20 per cent gross weight premium from Appendix 1 as it appeared in the latest ODT conservation order, 6A. As of the moment, there is discrimination so far as the ODT orders themselves are concerned. Local cartage carriers must not have a rated load in excess of total tire capacity as specified by ODT, whereas carriers covered by all other orders can exceed this by 20 per cent. Nothing has been done to bring about uniformity, but doubtless will be concurrently with the announcement of speed test results. Carriers object to a change.

Heavy-Duty vs. Medium Trucks

What about new equipment for truck operators in 1944? There were a number of plans cooking but they were at odds in particulars, and, in the light of Army demands, it was difficult to see how any of the plans could be realized unless they were violently revised. The ODT Motor Transport Division had on tap a plan calling for 100,000 trucks with a ratio roughly of three heavy-duty trucks (over 16,000 lb. gross) to one medium-duty truck (9000 to 16,000 lb. gross). The ratio admittedly was not a settled thing and open to revision but prevailing sentiment in ODT and WPB circles was so strongly in favor of heavy-duty units that unless an immovable object was met there was likely to be an irresistible tendency to effect little change. But an immovable object loomed in the form of the Army's 1944 demand for heavy-duty trucks. This demand was said to be more than double the industry's heavy-duty output in the best peace-time year. If ODT were to stick to its plan the industry would be called on to produce more than four times as many heavy-duty trucks as in peace-time. Those who know say the industry has no such productive capacity. The other plan for new equipment was that proposed to ODT by the American Trucking Association, Inc. This advocated more medium trucks than heavy-duty trucks, slightly less than in the ration of two to one. It was

(TURN TO PAGE 174, PLEASE)



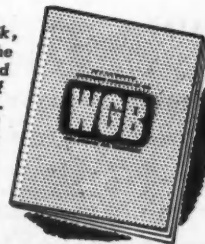
WGB CLARIFICATION

Removes ONLY Impurities

Many of today's best lubricants contain detergent additives, put there to prevent varnish formation. W.G.B. Clarifiers, with their deep cartridge of selected cotton, do not remove this protection. But they do take out the water and sulphur compounds (which combine to form destructive acids), also the grit and colloidal carbon which start oil breakdown.

It will pay you to insist on W.G.B. Clarifiers for gas and Diesel engines. You will find them sturdy, simple, efficient, and inexpensive to service and refill.

A fine book, explaining the mechanics and theory of W.G.B. clarification, and picturing all models will be sent you free on request.



WGB

OIL CLARIFIER, INC.
KINGSTON, N. Y.

CUSHIONS FOR THE CHARIOTS OF WAR



... another reason why you may not be able to get Plastic "Cavalon,"* Du Pont's synthetic resin coated upholstery fabric

What's in a tank? Strong armor, rugged mechanism and durable upholstery. Right there is one of the war uses for Plastic "Cavalon"—to give protection and comfort to the men who fight in these chariots of war.

Plastic "Cavalon"—made from synthetic resins—was Du Pont's answer to war shortages of both crude and synthetic rubber . . . shortages which excluded the manufacturer of rubberized upholstery fabrics for even military needs.

Yet synthetic resins, too, are essential to war production. Hence, Plastic "Cavalon" may be produced only for war- and essential commercial product-uses.

Plastic "Cavalon" is performing brilliantly on the steel-hard, steel-tough proving grounds of war. It meets and surpasses the requirements of Federal Specification E-KKL-136A, Type 3, Class A and B for upholstery. But despite the record it has set, Plastic "Cavalon" is being improved still further. From it, for example, there has been developed a new quality of fire-resistant upholstery, meeting Army Air Corps Specification 12026A.

When peace comes, Plastic "Cavalon" will be ready to serve you in countless new ways as a more superlative coated fabric upholstery than ever, because of these war-born developments. E. I. du Pont de Nemours & Co. (Inc.), "Fabrikoid" Division, Empire State Building, New York, N. Y.

WAR USES for PLASTIC "CAVALON"

SHIPS • TANKS • SUBMARINES
COMBAT AUTOMOTIVE VEHICLES • AIRPLANES

*"Cavalon" is Du Pont's trade mark for its synthetic coated fabric.



"CAVALON"

BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

AUGUST, 1943

Use postage-paid card inserted in this issue for free information on advertised products

"Stand by to repel U-boat attack"




And here they are manning their gun in a wintry sea

Official U. S. Navy Photograph

POINTER, trainer, gun captain, shell handlers—these men in the Navy man the guns that are mounted on the deck of every United Nations merchant ship that carries men and materials for war to foreign shores, and that bring us coffee and tea and sugar. Day and night, summer and winter, they must always be ready, always alert, ready for action. When this gun crew has nothing else to do, it cleans the gun, keeps it greased and oiled, and tightens up the bolts and nuts. It is always ready, and so is its crew. Every gun, every ship, every tank, every plane, every "jeep," every "half-trac" is assembled with bolts. Increased production facilities enable us to fill our automotive jobbers' requirements for replacements on cars, trucks, tractors and buses and at the same time maintain shipments of war materials in ever increasing quantity.

THE LAMSON & SESSIONS COMPANY • CLEVELAND, OHIO
General Offices: 1971 West 85th Street

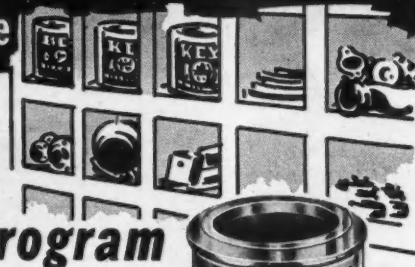
Lamson



KEY Graphite Paste

IS Indispensable

TO YOUR PARTS Salvage Program



Now is the time to set-up a Salvage Program for preserving gaskets and fittings so that they may be re-used. Key Graphite Paste is the ideal sealer for all new or old cylinder head, manifold and crankcase gaskets . . . and for differentials . . . to seal carburetor assemblies and gasoline lines.

Key Paste has no equal for your parts salvage program. It expands when heated and packs up under pressure to fill out all irregularities . . . economical to use—requires only water for thinning . . . also ideal for all gasoline and oil dispensing equipment . . . Listed by the Board of Underwriters.

Write today for a liberal Free sample of this KEY Paste today . . . no obligation.

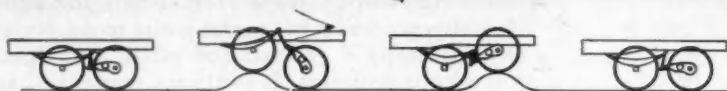
2612 McCASLAND AVENUE • EAST ST. LOUIS, ILLINOIS



Be 100% With 10% Buy War Bonds

TRUXMORE

WORLD'S BEST 3RD AXLE



Write for Bulletin No. 34

**"A TRUCK SHOULD BE
A MONEY MAKING MACHINE"**



WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 172)

based on a more practical study of operator's actual needs than ODT's plan. The latter had in it an element of reform. ATA asked for 97,640 trucks for for-hire operators in 1944 and said that adequate addition should be made to this estimate to take care of the needs of farm trucks and all other forms of private carriers.

ODT Wants to Handle TT's . . .

A movement is afoot in ODT to get control of the issuance of TT coupons for truck gasoline rations. Efforts are being made to persuade OPA to relinquish this job in ODT's favor. The move is a logical one in every respect; it would centralize allotment and coupon issuance in the agency that determines how much gasoline an operator should receive; it would conserve the time of operators; and it would place in one agency the responsibility for recalling and destroying unused coupons which, OPA has charged, are a big factor in black market operations.

. . . And Make Trade with OPA

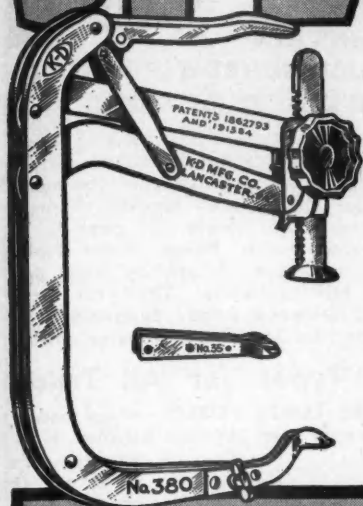
At the same time ODT is toying with the idea of relinquishing jurisdiction over hundreds of thousands of vehicles which are registered as commercial vehicles but which are not property carriers in the strict sense of the term or whose operations are a negligible factor in the transportation system which ODT is directed to preserve. Included in this group are station-wagons and converted passenger cars. Jurisdiction over these vehicles would be handed over to OPA and such vehicles would be denied TT rations. The change would enable ODT offices to concentrate on operations that are more vital to the war effort.

ODT's New Director

In Harold C. Arnot, ODT's Motor Transport Division has a new director well qualified to handle the very important job entrusted to him. He is without a stain of bureaucracy and

(TURN TO PAGE 176, PLEASE)

SPEED



The K-D 380 COMPRESSOR

A dependable Valve Spring Compressor, strongly built for hard service and fast as lightning for one man operation. Services nearly all L-head and valve-in-head motors, old and new. Great for general shop use. See it at your Jobber's.

Two sets of jaws furnished. Straight and Offset, as shown.

This is just one of the K-D TOOLS... "the hustlers for your toolbox." There are hand Lifters, special Tools for Ford motors, Ignition Point Tools, Piston Ring Tools and many others shown in the new K-D Catalog. Write today for your copy.

K-D MANUFACTURING CO.
Lancaster, Pa. and Hamilton, Ont.

KEEP IGNITION SYSTEMS IN FIGHTING TRIM

REPAIR

When Possible

REPLACE

Where Necessary

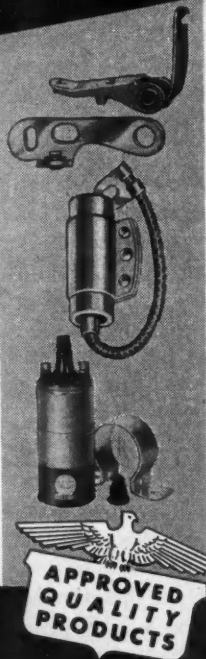
● NIEHOFF Products are dependable in every detail. They assure quicker starting, smoother acceleration, better gas and oil mileage and longer service. NIEHOFF Ignition Parts, Magneto Parts, Starter and Generator Brushes and Hydraulic Brake Parts are available through a national network of NIEHOFF Jobbers.

C. E. NIEHOFF & CO.

4925 Lawrence Ave., Chicago 30, Ill.

Branch: 1342 S. Flower St. Los Angeles, Calif.

NIEHOFF



THEY

HELP

MAINTAIN

SCHEDULES

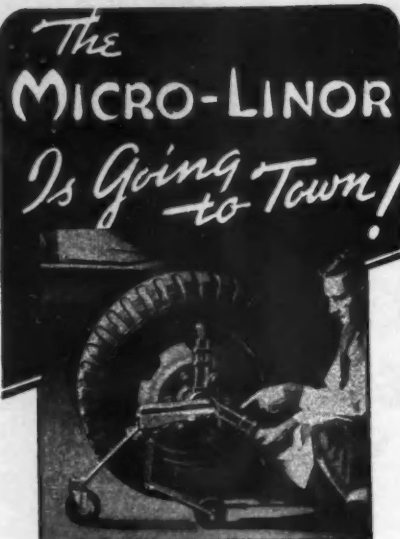
To service and maintain our vast fleets of commercial vehicles for scheduled operation is, alone, a mighty task. It requires the best in tools—tools such as Williams has made for over sixty years. Because replacements are difficult to get, we suggest careful use of the ones you have. They'll last until peacetime when Williams will again be able to supply the motor service trade with unlimited quantities.

WRITE FOR LITERATURE.

J. H. WILLIAMS & CO., BUFFALO, N. Y.

WILLIAMS

SUPERIOR DROP FORGED TOOLS
DROP-FORGINGS
& DROP-FORGED TOOLS



Outmodes All Former Wheel Alignment Instruments!

The advantages of the Micro-Linor are so widely recognized that it is fast being accepted as a "must" in service shops throughout the nation.

Never before has there been an instrument that checks the alignment of all wheels, rear as well as front. Never before an instrument that analyzes wheel-roll with the vehicle in motion and under load. Never before an instrument so comprehensive in the scope of its operation—yet so untechnical that no longer is it necessary to employ a highly skilled mechanic to locate wheel alignment defects.

Introducing a new principle in the field of wheel alignment mechanics—the principle of the "Tracer-Wheel"—the Micro-Linor now makes it possible to accomplish in a few minutes' time what formerly required hours of tedious labor.

Acquaint yourself with the revolutionary changes which the Micro-Linor has wrought in wheel alignment practice. Write for list of prominent users.

NEW! "TOE-IN" Measuring Gauge

Only
10 Inches
Long

\$9.85



Requires
Only
One Man
to Operate It

Easier to use! Just attach the grippers to the rims and take front reading. Then roll vehicle forward and take rear reading. All done in less than 2 minutes.

Extremely accurate — because gauge is held in same position for both readings.

Fits in tool kit. Every mechanic should own one.

WRITE FOR
CATALOG

MICRO-LINOR SERVICE CORPORATION
1629 W. Fort St. Detroit, Mich.

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 174)

has long been associated with highway transportation. How Mr. Arnot handles his responsibility remains to be seen. Most of the impressions he has made in the short time that he has been on the job have been favorable. But his success will depend, of course, upon the manner in which he administers existing orders. Having had field experience as an ODT regional manager in San Francisco he is reported to favor a policy which would give field officers greater powers. Unless policy controls are pretty definite and not subject to half a dozen interpretations, this method of administration may run into trouble and at the bottom of the trouble will be personalities. It is no secret that ODT has some men in the field who are heartily disliked by operators and who will run into difficulties if they misuse their power and try bludgeoning methods.

Mr. Arnot is said to be a disciple of simplification; simplification of the ODT orders, of their administration and of paperwork compliance. He is strong, affirmative and independent and there is hope that he may develop some of the pro-truck combativeness that has been lacking in ODT's relations with other government agencies.

Monthly Report Held Up

The new form of monthly reporting, announced by ODT a month ago, is being held up by the Budget Bureau which wants a clarification of procedure. The new form provides for reporting of gasoline consumed, mileage operated, tonnage hauled and idle equipment. It is understood that if retail operators are asked to report they will be told to ignore the "tonnage hauled" question. Operators with distributive services are "hot" on this question. They contend that answers would represent pure guess-work in most cases and would, consequently, be worthless. The report form will be sent by ODT to those operators from whom a monthly report is desired. Forms will be received by operators about the middle of the month for which a report is expected. Within

(TURN TO PAGE 178, PLEASE)

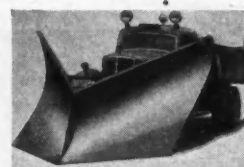
BAKER SNOW PLOWS

MAINTAIN TRUCK SCHEDULES WHEN THE DRIFTS ARE DEEP!

Prompt deliveries after heavy snowfalls are noticed and remembered by industry, as well as the consuming public. Bus patrons likewise appreciate minimum delays. It pays to be prepared—with Baker Snow Plows. Thousands are in use by truck fleet and bus operators. They are properly designed and ruggedly constructed for long time, abusive service.

All Types for All Trucks

V-TYPE TRUCK PLOWS—Four models, for trucks from 1½ tons upward. Mold-



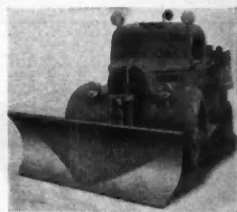
boards are curved to convey snow upward and off the top outer edge onto the shoulder of the road.

Wear-resistant adjustable runners support plow on inside so that weight of snow does not bear on truck, which only guides and pushes.

REVERSIBLE TRIPPING BLADE TRUCK PLOWS—Eight models. Clear paths

6½ to 9 feet.

All models are equipped with the Baker tripping blade; made in sections which deflect on striking a fixed object,



and react instantly when object is passed. All plows mounted on easily installed lift and push frames.

ONE-WAY LANDSLIDE PLOWS—Clear paths 7½ to 9 ft. Seven models: four with sectional tripping blades; three with rigid blades.

Hand hydraulic depth adjustment. Moldboard shaped to discharge snow onto shoulder well clear of roadway. Deflector extensions are available.



Write for Catalog 829 and attractively illustrated bulletin. "Snow—Friend of the Enemy". How soon you can procure a Baker Snow Plow can not now be predicted; but it will pay you to get the facts now.



BAKER MFG. CO.

571 Stanford Ave., Springfield, Ill.

BAKER TRUCK & TRACTOR SNOW PLOWS

**IF YOU HAVE A FEW REPAIR PARTS,
SHIP THEM TO ME... BUT GET
THE GRACO EQUIPMENT TO
THE TROOPS FIRST!**



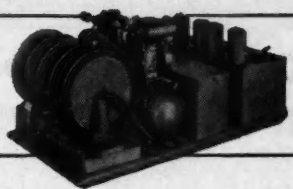
● If you have some repair parts, which you can supply, here's our list. But if you need any of them to build Graco Convoy Lubers—for the sake of the boys—make Convoy Lubers and get them to the troops first and fast.

Only the people in the industry know how precious good lubrication is—that the mightiest and most costly machines of war are as dead as a hitching post unless they have the right grease, in the right place, to make them mobile for attack and supply.

I feel a lot better about this war—knowing the fact that Graco precision and ruggedness are being made into Convoy Lubers for our fighting forces everywhere. Give them the best you have—in the meantime, we'll get along with what we have.

Graco Convoy Lubers

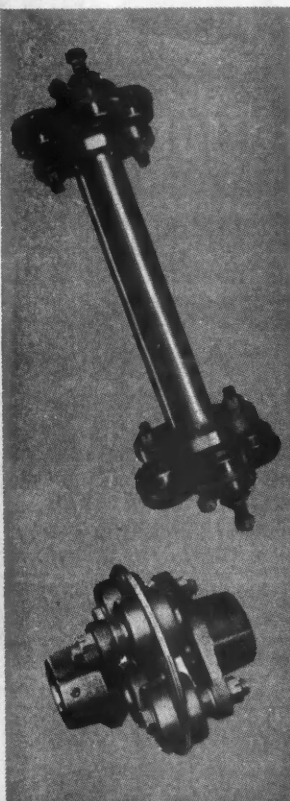
A complete portable field lubrication unit... air operated for dispensing chassis, gear, track and hypoid lubricants.



GRACO

GRAY COMPANY, INC. MINNEAPOLIS, MINN.

GRACO CONVOY LUBERS—PORTABLE FIELD LUBRICATION UNITS VITAL TO A MECHANIZED WAR—THAT'S GRACO'S FIRST JOB TODAY



MORSE

**Morflex Couplings—
Drive Shafts Reduce Friction,
Vibration—Wear**

Wear resulting from the friction and vibration of starting and driving shocks is sharply reduced when shocks are cushioned and absorbed by Morse Morflex Couplings and Drive Shafts. Efficient and economical, because they lower replacement and maintenance costs, while requiring no lubrication—Morflex Couplings and Morse Drive Shafts improve performance, too—leveling off initial shock thrusts and assuring a smooth, continuous flow of power. **IMPORTANT:** Write for complete data today. Secure valuable, new, drive information.

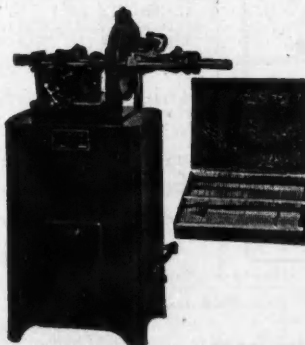
MORSE CHAIN COMPANY
Detroit, Mich. • Ithaca, N. Y.
Division of Borg-Warner Corp.

Morse facilities now 100 percent on War Work.

**MORSE COUPLINGS and
DRIVE SHAFTS**

Undersize or Odd Size Bearings in Two Minutes

This speedy, accurate and simple Machine bores individual bearing shells to any predetermined size and also resizes eccentric bearings. Takes less than two minutes to produce any job with mirror finish.



**TOBIN-ARP
Shell Bearing
Boring Machine**

Full details sent upon request

TOBIN-ARP MFG. CO.

2845 Harriet Ave. South, Minneapolis 8, Minnesota

The
Ring
for
These
Times



WAUSAU OIL-SAVR Piston Rings

The Free Running Ring with the
Safety Center Unit
See your jobber or write
WAUSAU MOTOR PARTS COMPANY
2400 Harrison Blvd., Wausau, Wis.

WAR EFFORT

Now Taking Our
Full Capacity

GRICO 2-AXLE DRIVE

19842 W. Eight Mile Rd.
Detroit, Michigan



FOR COMMERCIAL
VEHICLES AND
INDUSTRIAL MACHINES
THE NEW
"PEKA" TRAVEL LOG
Manufactured by
PAUL KNOPF 41-43 37th Street
LONG ISLAND CITY, N. Y.

Dart Trucks

HEAVY DUTY FOR
OFF THE HIGHWAY SERVICE

— Specially Designed for —
Coal Mining—Iron Ore Mining—Copper
Mining—Pit and Quarry—Logging—Oil
Fields—Etc.
It Costs No More for Trucks Specially
Built to Fit Your Needs. Have Our Engi-
neers Visit and Analyze Your Operation.

DART TRUCK COMPANY
KANSAS CITY, MO.

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 176)

10 days after the end of the month
the report must be mailed.

Parts Inventory Protested

An authoritative source informs
this department that the Parts Ad-
visory Committee has sent to WPB
a resolution dealing with L-158, the
replacement parts production limita-
tion order. The resolution asks that
the order be amended to permit a
much-needed build-up of parts in-
ventory. This would eliminate the
costly delays in the procurement of
parts which now plague automotive
users. The April inventory base,
provided by the order, was a poor
choice, according to the resolution.
Parts inventories at that time, it is
contended, were already at the bot-
tom of the barrel.

No Demand—No Rationing

There is under consideration in
WPB and ODT a proposal to deter-
mine what vehicles in the truck ra-
tion pool are not in demand—such
as special types—and remove these
from rationing restrictions. This
sensible idea originated in ODT but
must have WPB approval. If WPB's
records are efficiently kept, the job
ought not to be onerous. But there
is considerable doubt regarding the
WPB Automotive Division's effi-
ciency.

WPB Holds the Bag

The meeting at which truck manu-
facturers met with WPB's Automotive
Division to discuss production and
the tying in of engine displacements
with gross vehicle weights never got
to the fireworks stage. Manufactur-
ers wisely refrained from getting
into a dispute with WPB over ve-
hicle design. They took the position
(TURN TO PAGE 180, PLEASE)



Call on Heil's
nation-wide distributor organiza-
tion for specialized service on
dump bodies and tanks. BH-65

THE HEIL CO.
GENERAL OFFICES: MILWAUKEE, WISCONSIN

SPEED WASH FOUNTAIN BRUSH

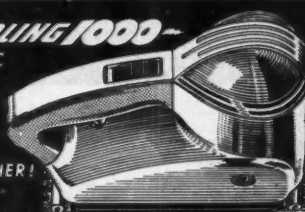


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FASTER!
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BETTER!



Vibrationless!

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Both "V" TYPE and
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FOR ALL MOTOR TRUCKS
FROM 1/2 to 10 TONS

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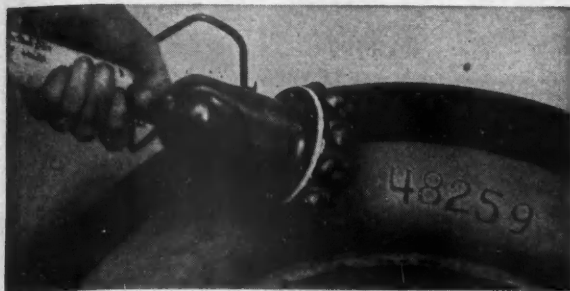
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HAVE YOUR OWN TRANSPORTATION MAINTENANCE PLAN!



Keep your own records of tire wear, change, repair, recapping or replacement. It's easy by using an EVERHOT Electric Branding Iron.

With the EVERHOT, which has ten digits (0-9) it is possible to put your own brand on each tire or the serial number on both sides in larger figures where it can be plainly seen. The Branding Iron and faithfully kept records with the EVERHOT TIRE RECORD SYSTEM (free to Everhot users) will give you the facts at a glance about every tire in your fleet.

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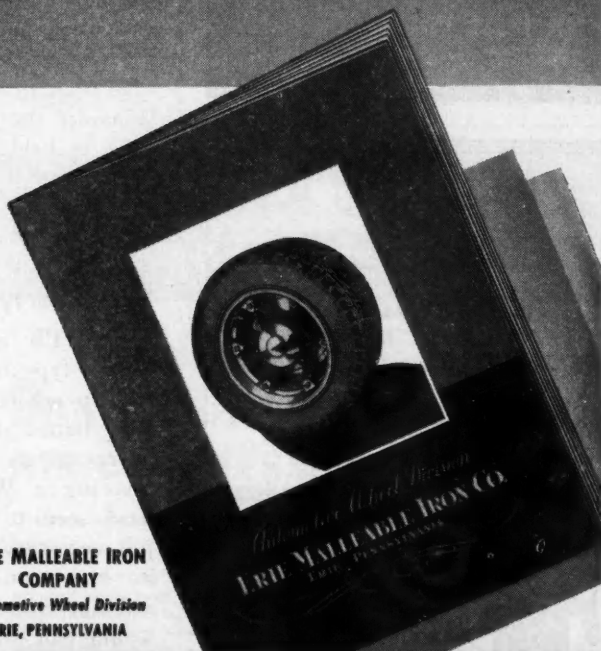
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Automotive Wheel Division
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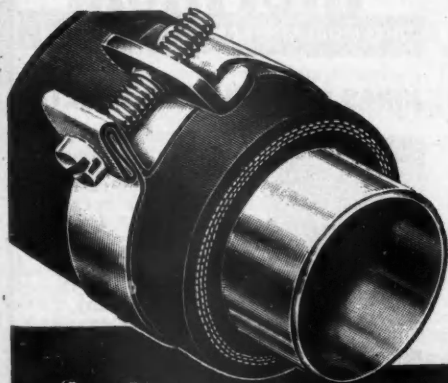
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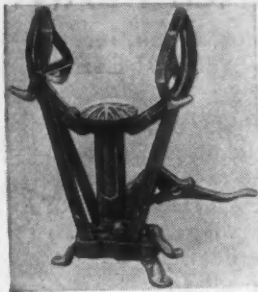
Investigate the superior advantages of this popular, leak-proof, self-locking, completely universal hose clamp. One size actually eliminates more than 100 different sizes of preformed clamps . . . Reduces clamp inventory . . . Assures having right size clamp on hand when needed. Maximum take-up. Costs less, too! Easiest to use! Standard length, packed flat, services hose from 1/2" to 3" O.D. Featured by leading jobbers.

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- 1—Easy inspection of the inside of tire.
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Ask your Jobber or write direct.
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PRIMERS • FITTINGS

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1901-1941 Carrol Ave., Chicago, Ill.
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CAN "TAKE IT"

The smartest, most improved unit of its type, Model V-409 Vertical Lift Landing Gear is especially adapted for heavy duty service.

Powerful—rugged—dependable.

Complete truck and trailer equipment. Catalog on request.

HOLLAND HITCH CO.
HOLLAND, MICHIGAN

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 178)

that WPB declare the capacities it wants built and manufacturers would do their best to produce them. If the specifications laid down cannot be met when allocations are made the manufacturers then will point out what modifications should be made to assure the quantity desired. The view is held that WPB's arbitrary engine requirements do not take realistic recognition of productive capacity in the particular types.

That Liberty Truck

In WPB automotive circles the Liberty-type truck idea continues to pop up regularly and to be as regularly batted down. It is contended by opponents of the idea that those favoring a World War II Liberty truck seem to overlook the retooling job necessary to such a move with its huge consumption of materials and man-hours. Moreover, the venture would call for government subsidy of the retooling.

Reform versus Reality

The emphasis of ODT and WPB men on heavy-duty trucks has many manufacturers perplexed. The estimates are pulled out of the air without prior consultation with the various elements concerned. Capacities are arbitrarily decided and take no consideration of the manufacturers' problem, i. e., finding someone who will buy them. In peacetime most heavy-duty jobs were practically custom made, it is contended. There was a buyer and an order before the frame was laid down on the assembly line. The emphasis on durability ignores the types of trucks that

(TURN TO PAGE 182, PLEASE)

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Plastic LENSES

Made in two colors, red and amber that will not fade, they are shatter-proof and can take the hard knocks, because they are flexible. (Try one yourself). They have glass-like transparency and are weather-proof.

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Save space! Open upward! Coil out of way. Always safe from wind. Can't joggle open! Less chance of damage to doors. All Metal. Fireproof! Prevent thefts. Write for details.

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OIL AND MOTOR CLEANER

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The right braking material
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The world's largest operators of commercial vehicles use Jones Portable Tachometers to check engine speeds for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y., Shell Petroleum Co., Atlantic Refining Company, Tidewater Oil Company, Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy.

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**MAINTENANCE
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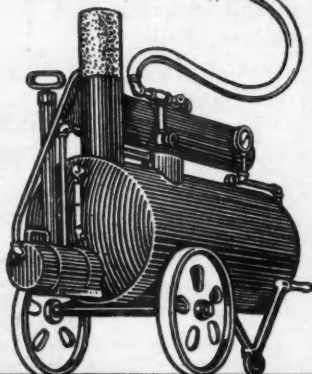
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Ordinarily Difficult Cleaning Jobs Made Easy

You'll be amazed at the efficient and convenient manner in which the SIEBRING STEAM CLEANER removes the hardest grease, grime, and dirt from trucks, motors, tanks, tractors, airplanes, and all heavy machinery.

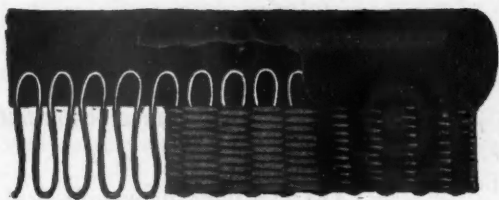
This automatic appliance saves many hours time and precious labor—operates satisfactorily on either fuel oil, artificial or natural gas. **TEN DAYS FREE TRIAL OFFER . . .** write for literature and surprisingly low cost. Dept. 82



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**KEEPS OUT
RAIN • DUST • DIRT • DRAFTS**



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Waterproofed
WEATHER STRIPPING**

INNER-SEAL, applied to doors protects interiors of heavy duty vehicles. The rustless, spring-wire re-enforced flange holds INNER-SEAL firmly in place—a necessary feature unobtainable in any other weather stripping.

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FOR DIESEL ENGINES

STOP THAT SMOKE! Test your diesel nozzles quickly, accurately — with America's most widely used nozzle tester. This sturdy, lightweight, precision-built, low-cost, portable hand test pump can help you avoid costly delays and possible damage to injector tips.



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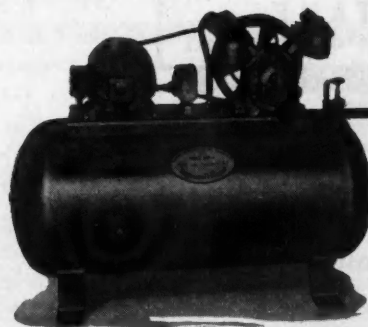
Manufacturers of Diesel Pumps, Injectors, Nozzles, Nozzle Holders, etc.

DON'T SABOTAGE YOUR AIR COMPRESSOR

Proper lubrication of your air compressor will keep it on the job. Check these points:

- 1 Check oil-level in compressor crankcase once a week. In units with bayonet-type gauge, keep level between high and low marks on gauge. In units with filler hole on side, keep oil level within $\frac{1}{4}$ " of the top of the hole.
- 2 Change oil every 500 hours of operation. If a compressor operates about 4 hours each day, this would call for changing the oil every 5 months.
- 3 Use only clean, new oil of the proper grade as listed in table below.

Normal heated room	SAE 10 or 20
Temperatures above 100°	SAE 30 or 40
Temperatures below freezing	SAE 10-W



**CHECK
OIL**

All Ingersoll-Rand plants have been awarded the Army-Navy "E" for their part in war production.

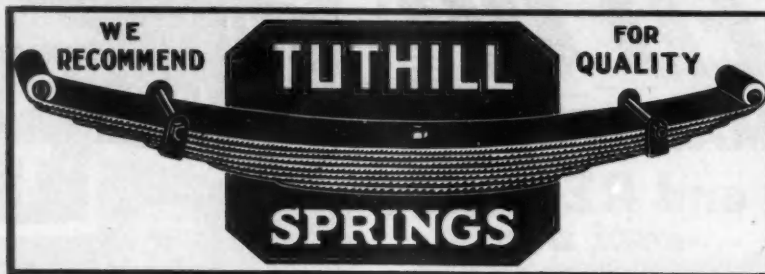
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SINCE 1880**

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HIS ALLIES
ALL OVER
THE WORLD**

STOPS FIRES FAST!

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EXTINGUISHING UNIT**
for protection of automotive
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Underwriters' Approved

Complies with non-critical,
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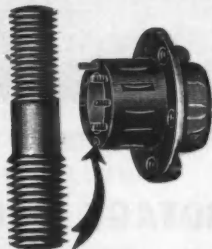
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**DIESEL OIL
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ALL LIQUID OR GASEOUS FUELS

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HEAVY-DUTY Clutches**
Insure Maximum Clutch Life

- ★ 20 ball-hinged levers for uniform pressure, smooth engagements, easy disengagements.
- ★ Parallel disc contact ★ No localized burning. ★ Long facing life.
- ★ Warp-resisting pressure plate.
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Write for Full Information
Lipe-Railway Corporation
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WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 180)

operators are now using and around which their businesses are built. Manufacturers claim current planning smacks too much of reform and not enough of reality.

Trailer Quota Cut

One bit of realism has penetrated to WPB and ODT circles and that is that most of the 7500 trucks allocated for manufacture during the last half of 1943 will not be manufactured in the period. The manufacturers got their allocations too late from WPB, which failed to take into consideration the time it takes to get through a melt of steel, to manufacture the component parts and to assemble them into vehicles. Trailer production for the last half has already been cut back from 9200 to 5610. Permission has been granted for the manufacture of 1600 third-axle attachments.

OPA's Truck Problems

OPA doings include restoration of gasoline bulk discounts for eastern fleets and revision of the used-truck price ceiling order known as MPR-341. It is understood that the used-truck revision will retain the original percentage tables but will give dealers a better chance to make some money and break up the black market. As reported here last month the legitimate used-truck market has been stagnant ever since the price regulation became effective. Dealers took their case to OPA and were assured of relief. At the same time OPA promised to bring out a percentage schedule covering used-trailer prices. OPA is also working on the big headache known as ceil-

(TURN TO PAGE 184, PLEASE)

*The complete line
that completely satisfies*



Gasket craftsmen since 1906
The Fitzgerald Mfg. Company
Torrington, Conn.

**REDUCE
COSTS
with
RAMCO
10
up
PISTON RINGS**

SPECIALLY BUILT FOR FLEET OPERATION
See your Ramco Jobber or write Ramsey Accessories Mfg. Corp., 3710 Forest Park Boulevard, St. Louis, Missouri.

*For a Smooth, Safe Ride
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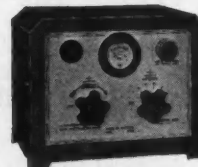
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Hydra-Matic Shock Eliminators

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The Cleveland Pneumatic Tool Co.
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**VALLEY CHARGERS
HAVE
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Remember Valley Chargers . . . when we can again supply you with these simple, efficient and economical battery-charging units.



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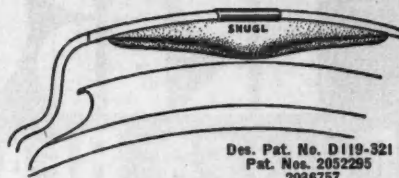
DEFEAT ONE OF THE SABOTEURS OF TRUCKING

by using

Snugl Fade-away BALANCE WEIGHTS

THE WEIGHTS THE GOVERNMENT USES

Tire wear, one of the costly and serious saboteurs in the trucking field can be very largely defeated by balancing each wheel with "Snugl Fade-Away" balance weights, the weights with the dove-tailed clip that is self locking and clings with a bull-dog grip. Snugls are easy to install and adjust. They cannot rattle or work loose. The clip being steel against steel on each side the rim flange. Streamlined to make dynamic balancing an easy and quick job. Cannot be seen so easy. Now available in sizes 1/2 oz. to 1 1/4 lbs. Full range of sizes.



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Stop that Saboteur today. Ask your Jobber about "Snugls" or write us direct.

MID-WESTERN AUTO PARTS, Manufacturers, 824 E. Elm St., Kokomo, Ind.

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DEPENDABLE SINCE 1877



terme-plate
MUFFLERS

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SPRINGS

MAREMONT AUTOMOTIVE PRODUCTS INC.
SOUTH ASHLAND AVENUE AT 17th STREET, CHICAGO, ILLINOIS

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DO-RAY
SAFETY LIGHTING
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We regret that it is impossible to give you our usual good service on ALMETAL Universal Joints. There are many reasons for this—restrictions on material and war conditions—older cars and trucks require more parts. We shall do our best to serve you now as in the past, and if there are delays, please understand that they are due to causes beyond our control.

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Sterling MOTOR TRUCKS

For more than 36 years Sterling has been building quality motor trucks.

Specific heavy duty models powered with gasoline and Diesel engines for highway transportation, mining, quarrying, logging, stripping, excavating, etc.

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Our Plant is working to capacity on "KING" Testing Equipment for the Government, and we regret that we cannot give our customary good service. However, we can ship most orders with the required priority rating.

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Specify
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Forty Years of Service
Many special and standard sizes of dies in stock. No die charge for these.
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The Scientifically Correct
DIRECTIONAL SIGNAL SYSTEM



Directional Signal
for every type of
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Finger-clip control
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Today's TELEOPTIC equipment is the result of 20 years of Scientific experimentation in the field of directional signals. It is a dependable, thoroughly tested, quality product. Leading laboratories have reported it 99% perfect after tests equivalent to a lifetime of service.

Let us quote you on the cost of TELEOPTIC as standard equipment on your vehicles.

JUNCTION FUSE BLOCKS



Made of Bakelite in one piece

Designed for easy and safe connections. Complete with all necessary terminals, screws, washers and nuts.

Contact us today concerning
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THE TELEOPTIC COMPANY
RACINE, WIS.

Manufacturers of Automotive Accessories

THERE IS A GUARANTEED

Pedrick
ENGINEERED SET

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FOR

EVERY COMMERCIAL VEHICLE

STANDARD & SPECIAL TRUCKS
ANY SIZE OR TYPE



AVAILABLE TRUCK COMPANY
2501 Elston Ave., Chicago, Illinois

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 182)

ing prices for NEW trucks and trailers. Because of the monthly increments allowed on vehicles in the ration pool, there is a theoretical possibility that new vehicles might be lower priced than old ones. And many dealers don't care if they don't sell their old ones. The increments are guaranteed and they can always sell the vehicles to the government at retail price plus the increments. The new vehicles have not yet been brought under the monthly-increment provision of the Murray-Patman Act.

Gas Saving Idea

An effort is being made by ODT to get northern New Jersey authorities to permit Hudson Tunnel-using trucks to travel over the Pulaski Skyway and thus save thousands of barrels of gasoline monthly. Trucks are now barred from the shortcut and must use circuitous routes through populated areas.

Trailer Trouble in WPB

The trailer industry is having a time trying to convince the Automotive Division of WPB to authorize the building of trailers that operators want and will buy. Over the protests of some manufacturers the industry committee went along with WPB on its prototype trailer with wood body. Then operators came along and served notice on both manufacturers and the WPB that they would not buy open top van bodies made of wood. The open top van idea is enough to scare some operators stiff. There has been an alarming increase in claims due to theft, brought on by the black market demand for rationed articles, and



GLOBE
SPINNING POWER
TRADE MARK REG.

BATTERIES

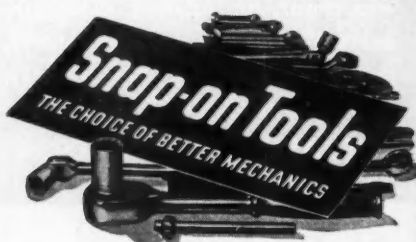
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DAYTON Spoke Type Steel

WHEELS
AIR-COOL

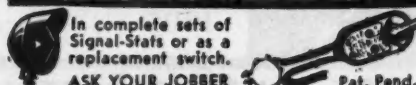
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FOR TRUCKS, TRAILERS AND BUSES.
THE DAYTON STEEL FOUNDRY CO.
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Snap-on Tools
THE CHOICE OF BETTER MECHANICS

There's only One
BURN-OUT PROOF
DIRECTIONAL SIGNAL SWITCH
and we make it!



In complete sets of
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replacement switch.

ASK YOUR JOBBER

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SIGNAL-STAT CORPORATION

68 JAY STREET BROOKLYN, N. Y.



IMPERIAL
Plastic S.A.E. Flare
Fittings and
Plastic Tubing

• When you can't get Imperial brass fittings you can use these Imperial plastic fittings with copper, steel or plastic tubing. Available in a large variety of sizes in the popular types. Plastic tubing as a substitute for copper and steel is also available. Bulletin No. 331 gives complete information and prices.
Order from your JOBBER

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Manufacturers & Designers
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CRANKLESS
WINDOW REGULATORS
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Write for Descriptive Matter
U. S. A. GREAT BRITAIN

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**SHULER
AXLES**
SHULER AXLE CO.
LOUISVILLE, KY.

operators foresee an epidemic of tarpaulin slashing if they were to use open top vans. The claims, on top of an approximately 10 per cent payload loss occasioned by wood bodies, would just about bankrupt many operators now on the ragged edge. This factor of economics is one that the Automotive Division blissfully ignores. It is somehow assumed that the war has changed business principles and that cost of operation is no longer an important factor. Hope is entertained that the Division may recede from its position.

Private Carriers Blow the Lid

Organized private carriers were preparing a strong protest to Director Eastman regarding ODT treatment of private operators and the changes in administration methods. It was said the protest would pull no punches, would represent a history of private carrier grievances and would wind up with demands. If the private carriers get no satisfaction from Director Eastman they propose to go higher.

END

(Please resume your reading on P. 37)

New Trailmobile Quarters in Phila.

As part of its program of expanding sales and service facilities The Trailer Co. of America has opened a new factory branch at 2308-16 N. Sixth St., Philadelphia, Pa. Branch Manager H. Wilke Taylor has taken on trailer-experienced Dick Radke as service manager. The new location provides ideal service facilities.

World Bestos Adds New Men

The World Bestos Corp., of Paterson, N. J., manufacturer of Grafil brake lining, announces the appointment of three new men to its staff: Robert E. Leary, Jr. is now Purchasing Agent; Frank J. Brogan, is representative of the Texas and Oklahoma territory, and Ralph B. Plant, representative of the southern territory—covering Mississippi, Louisiana, Alabama, Arkansas and part of Tennessee.

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Rubber-Bladed
Defrosting &
Ventilating
Fan

Fulton Electric Sleet-Frost Shield

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THE FULTON COMPANY
1912 So. 82nd St., Milwaukee, Wis.

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MERRILL
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WHEEL BALANCER
Balances Wheels on Any Vehicle
(So accurate it is used to
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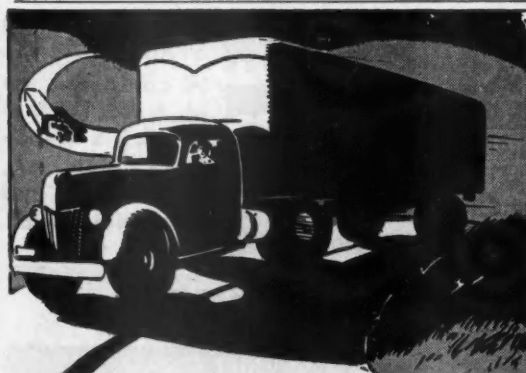
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"Tomorrow's Balancer Today"

**PROTECT
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**American Safety Tanks
do
Prevent Truck Fires**

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GAS! OIL! TIRES!**

Buell High Pressure Air Horns have a powerful, penetrating tone that gets attention and commands respect. Eliminate many time-wasting stops and starts. Available on Priority.

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Used on bomber and fighter planes to operate brakes and machine guns. Precision workmanship assures long, dependable service without frequent parts replacement.

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GRUELING years of toughest service prove Blackhawk Hydraulics superior in safety, rugged dependability and utility. "Service-Proved" Seal found only on Blackhawks. Only complete line of hydraulic hand jacks—models up to 50 tons capacity.

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Oldforge QUALITY TOOLS

To "keep 'em rolling" and do your part in the war effort your maintenance operations must be efficient and speedy. Efficient maintenance requires good tools—rugged tools that can stand the gaff.

Good Tools are economical—buy Quality Tools.

Write today for our catalog of Quality Tools for use in Fleet Shops, Automotive and Aviation Industries and the Maintenance Shops of our Armed Forces.

QUALITY TOOLS CORP. New Wilmington, Pa.

CCJ NEWSCAST
(CONTINUED FROM PAGE 72)

**SAE Recommendations For
Conserving Tungsten**

The SAE War Engineering Board, at the request of the WPB made the following recommendations for the conservation of tungsten in distributor points, voltage regulator points and horn contact points.

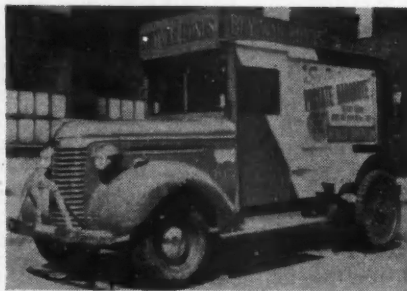
"About 40 per cent of the amount of tungsten required for distributor points can be saved by reducing the diameter and the thickness of the points. Points with a diameter of .150 in. and thickness of .040 in. can be reduced to .125 in. diameter and .030 in. thickness, while points of .187 in. diameter can be reduced to .150 in."

The committee admitted that the life of contact points will be shortened, and more frequent adjustments required, if these recommendations are adopted.

"A further saving can be made by requiring every purchaser of new distributor points to surrender the old points. It is believed that approximately 60 per cent of these salvaged points can be redressed and used again."

The report stated that most voltage regulator points are not made from tungsten. Only one manufacturer uses tungsten for one of the contact points and the thickness is only .020 in.

As to horn contacts, the report showed that no new stock of horn contact points has been furnished to manufacturers for quite some time. New requirements will come out of present stock.



This standard half-ton Chevrolet truck never had a rear like this when it left the factory. To emphasize rubber conservation, the Chicago Herald-American converted the rears of 15 delivery trucks from balloon tires to solid rubber on a plywood wheel, as shown above, or artillery wheel with steel rims. Two methods were used in effecting the conversions to permit the use of the large diameter wheels: Chain and sprocket drive, as above, and lowering the axle

**Army Industrial Property Disposal
Simplified by New Regulation**

Complete overhauling of the Army's procedures for disposing of surplus government-owned and Army-controlled industrial property was announced by the War Department through publication of revised Procurement Regulation No. 7.

The new procedure eliminates many present requirements that entailed delays in disposal of such surpluses, and permit their sale to private jobbers, wholesalers and dealers when there is no immediate known use for them.

**For Engine Bearings
Clutch Plates & Parts
King Bolt Sets**

**Monmouth
is the name**

**DANDUX
CANVAS PRODUCTS**

Dandux Canvas Products meet Army and Navy specifications — they will meet yours. "Everything of canvas," for every industry—for a quarter century. Write for folder today.

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"... pioneers in
safety equipment"

lamps • mirrors • reflectors • flares

AMERICAN AUTOMATIC DEVICES CO.
Harrison, Throop and Congress Streets
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AUSTIN THE ACCEPTED
STANDARD . . .

A complete line
of **LANDING
GEARS . . .**
**HORIZONTAL,
VERTICAL and
FOLDING TYPES.**



Write for complete information on "SAFETY PROPS" and FIFTH WHEELS.

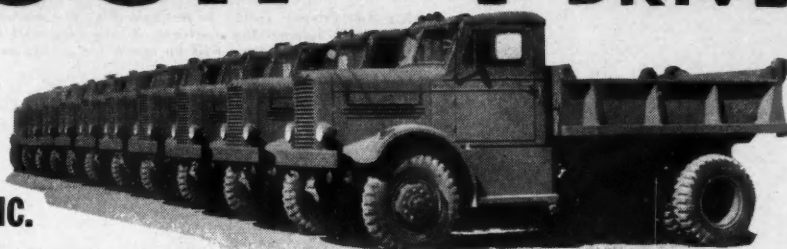
AUSTIN
TRAILER EQUIPMENT COMPANY MUSKOGEE, OKLAHOMA

OSHKOSH 4 WHEEL DRIVE

In war and peace, for 25 years Oshkosh Trucks have proved tough and dependable for snow removal, construction, and other heavy work.

OSHKOSH MOTOR TRUCK, INC.

Oshkosh, Wisconsin, U. S. A.



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REPLACEMENT CARTRIDGE

QUALITY PROVEN
OIL FILTER CARTRIDGES

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FLEET OWNER

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Battery Chargers
or Grinders?**



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quill
mounted
on each
plug
stem.

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BY FIXING UP
CARS & TRUCKS
YOU ARE HELP-
ING TO WIN
OUR BATTLES

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CORPORATION

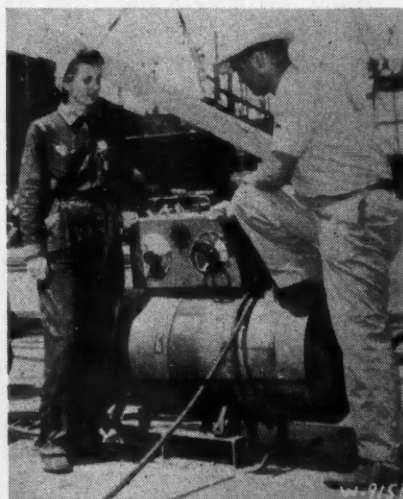
65,828 Trucks in Pool, June 1

Shrinkage in the nation's reserve pool of new commercial motor vehicles is evidenced by a report published by the Automotive Division of the War Production Board.

The report shows that a total of 65,828 trucks remained in the pool on June 1, 1943. The figure includes those vehicles held in the pool for Army, Navy, Maritime Commission and other specified agencies as well as the number held for essential civilian rationing; and is made up of 19,975 light trucks, 41,774 medium trucks, and 4,079 heavy trucks. It reveals a withdrawal from the pool of 16,500 trucks of all types since March 6, 1943, when the total was 82,328.

In addition to the trucks the report shows that the pool still holds 3,045 trailers and 987 third axle attachments.

C. J. Freeman has been appointed General Manager of Kerkling and Company, Bloomington, Ind. Mr. Freeman will direct sales activities for all divisions except the Pacific Coast which will continue under the direction of Mr. C. A. Kerkling, President



Winner of the first National Women's Arc Welding Championship held recently, was blue-eyed Vera Anderson, shown with W. B. Bowen, her welding superintendent, of Ingalls Shipyard, Pascagoula, Miss. Miss Anderson's victory netted her \$350 in War Bonds, a massive silver loving cup, a week-end trip to the White House, and title of "Queen" of the welding world

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ECONOMY
DURABILITY

Permalux "KOLORFILM"

PERMALUX "KOLORFILM" decals offer greater durability and economy in application and maintenance. Completely synchronous with modern truck finish, they last longer . . . look better!

IT'S MADE OF DuPONT "DULUX"

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for full volume and
top pressure operations

See Your Par Jobber

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DEFIANCE, OHIO, U.S.A.

ADVERTISERS' INDEX

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Flexible at Extreme Temperatures!

In the sub-zero cold of the stratosphere . . . often dropping to 70 or 80 degrees below zero . . . Permatex Aviation Form-A-Gasket does not become hard, crack or fly to pieces.

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Skips on

FABRICATED in a huge assembly shop, this giant ship section has a top surface area as big as a singles tennis court. Hauling bulky, prefabricated sections like this from shop to shipway is a vital war-time job of heavy-duty trailers.

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Texaco Marfak, for example, provides a tough, adhesive film that cushions chassis parts against road shocks, and protects them against road splash. This unusual product provides ideal liquid film lubrication inside a bearing, yet maintains its original consistency at the outer edges...sealing itself in, sealing out grit and water.

For wheel bearings, use *Texaco Marfak Heavy Duty*. It stays in the bearings—off the brakes—assuring better braking efficiency. No seasonal changes required.

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- ★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.
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with Texaco than with any other brand.

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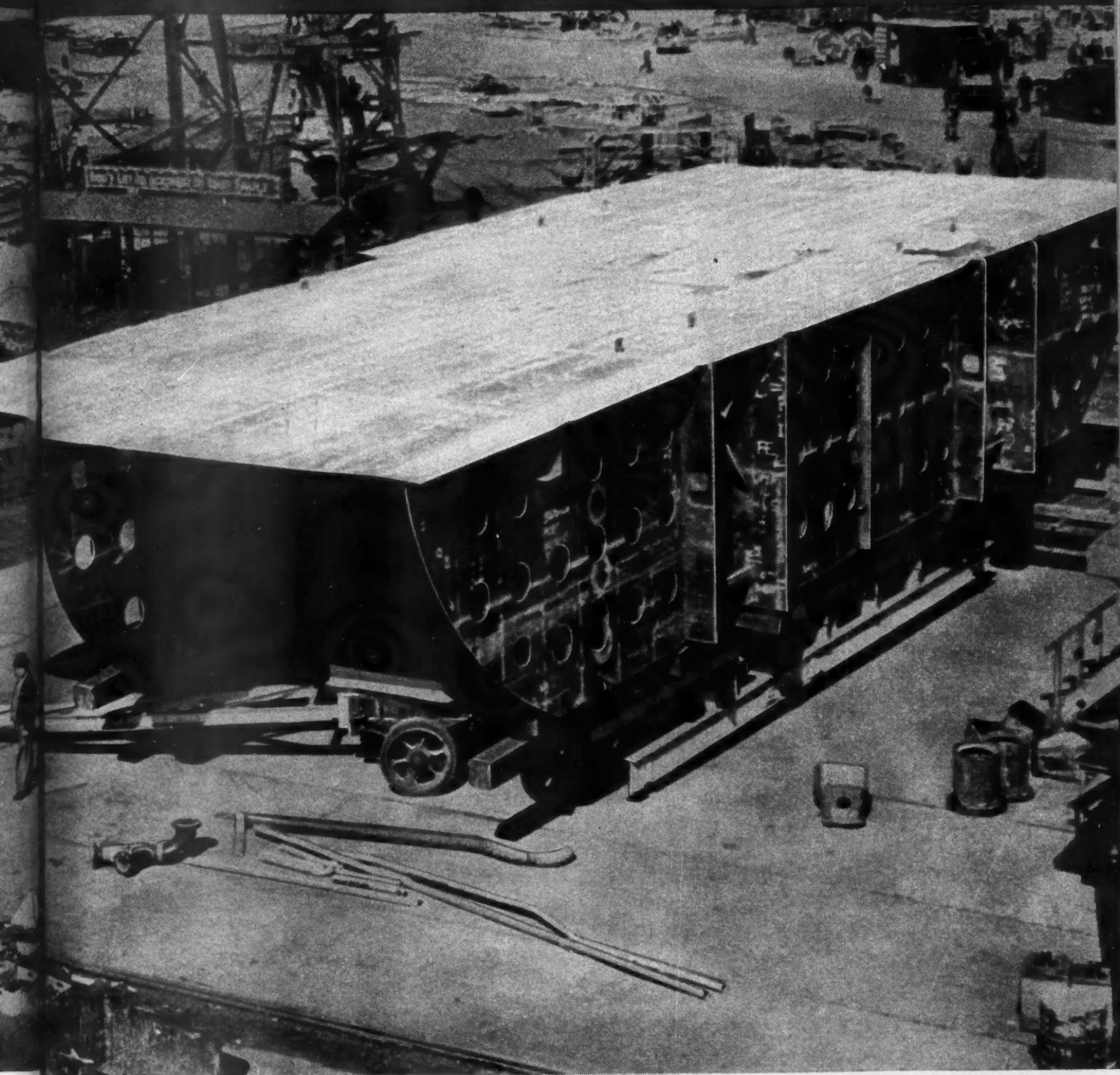


TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT—CBS



TEXACO

Wheels!

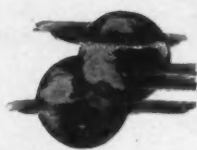


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HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

M A R F A K



...off to fight!



GW Truck Tanks are delivered day by day via land and sea "On All Fronts."

Thousands of mobile Aircraft Refueling Tanks are required for supplying gasoline and engine oil to our Wings of Victory. A highly important requirement of these refueling tanks is the filter for eliminating dirt and water from the gasoline.

Gar Wood Industries, Inc., is one of the principal suppliers of these filters which are not only installed on all GW Aircraft Refuelers, but also furnished to other Government Contractors for the same use.

GW Truck Tanks serve many war purposes including the transportation of motor fuels for the movement of our mechanized armies, and chemicals used in manufacturing explosives.



GW Refueling Unit in Active Service in Guadalcanal (see arrow)



ACME NEWS photo—
passed by Navy Censor.

OUR ONLY JOB now IS TO WIN THE WAR

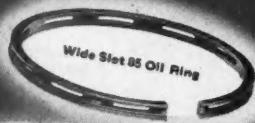
TANK DIVISION
GAR WOOD INDUSTRIES, INC., Detroit

Protect Freedom
**BUY
WAR BONDS**
for Victory!

The Right Prescription



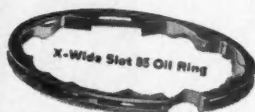
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BS Oil Ring



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General Spring Compression Ring

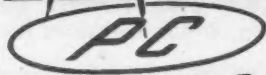
NO SINGLE piston ring combination of *any* make can be used as a panacea for stepping up performance in *all* trucks. There simply is no such magic combination! If it were possible to produce one, Perfect Circle would be the first to do so.

As it is, Perfect Circle *does* have a plan whereby Fleet Maintenance Superintendents can choose the *right combination* for each specific make and model . . . for the particular condition of every engine . . . for the type of service to which the engine is subjected. It's the new Perfect Circle Survey Plan for Fleet Maintenance.

Under this plan it is possible to select from more than 100,000 different piston ring combinations, the one combination ideally suited for any particular unit in your fleet. Cost of oil and gas goes down as performance goes up! Piston rings, pistons, and cylinders give longer service!

A Perfect Circle Engineer will gladly co-operate with you in making a survey of your fleet. Call your Perfect Circle distributor or write: The Perfect Circle Companies, Hagerstown, Ind., U.S.A. and Toronto, Ont., Can.

PERFECT CIRCLE



PISTON RINGS

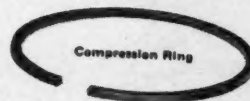
THE NATION'S CHOICE

HELP WIN THE WAR!

Co-operate with the
ODT Preventive
Maintenance
Program



K-Wall 200
Compression Ring



Compression Ring



200 Compression
Ring



70 Compression
Ring



1. Teamwork! Under the Papuan sun this ground crew team—and countless others like them—sweat together through endless hours of fatigue, short rations and malaria to “keep ‘em flying” for Victory. Timken, too, is all out for Victory. Day and night our factories roar that Peace may come sooner to the world. Day and night Timken is producing more axles, brakes and other important parts vital to war transportation and our fighting forces.



2. Farmer urges teamwork. “I am a dirt farmer and a fruit grower,” says W. K. Bristol, Almont, Michigan. “I know how necessary it is to Victory to keep all farm trucks and tractors operating. Teamwork between farmers, equipment dealers and mechanics is the only way to accomplish this end. It has been rightly and authoritatively stated that Food will win the war and write the peace. Extra-good care of equipment is our first duty.”

WHEREVER WHEELS ROLL TIMKEN KEEPS 'EM ROLLING



The toughest days in the “Battle of Conservation” are here. Each day the Nation’s vehicles grow older, manpower becomes shorter and the demand for increased production in factories and on farms grows greater. *Teamwork* alone will win! Make Timken a member of *your* team! Use Timken’s complete driver and maintenance aids. Give your entire organization an opportunity to see and profit by Timken’s full-color, sound slide film “TEAMWORK.” This Timken conservation program is approved by ODT and used by leading motor transportation companies. Mail the coupon today!

TIMKEN AXLES

THE TIMKEN-DETROIT AXLE CO., DETROIT, MICHIGAN
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THE TIMKEN-DETROIT AXLE CO.
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Please send free driver and maintenance aids. ☐

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Address _____

City & State _____

CHAMPION SPARK PLUGS



Champion Spark Plug Co.
Toledo, Ohio

June 28, 1943

Gentlemen:

In view of the existing conditions and the demands made upon Motor Transportation, we believe it is opportune for us to mention what an important part good spark plugs mean to all Motor Carriers.

We operate a large fleet of trucks and tractors and have for years used Champion Spark Plugs. They have proven to us to be very efficient, dependable, and economical. We have further found out that a motor is no better than the spark plugs that are used therein.

We are enclosing herewith a picture of just a few of our units. We are pleased to recommend the use of Champion Spark Plugs in any or all motors, as we found Champion Plugs are made in types and sizes suitable for obtaining the maximum efficiency, dependable service, and long life regardless of the make or model of any power unit.

Very truly yours,

Louis C. Wolff
Louis C. Wolff
Supt. of Maintenance



For years we have devoted all our research, engineering and manufacturing skill to constantly maintaining and improving the quality, economy and dependability of Champion Spark Plugs—the only product we manufacture. Ample proof that we have been successful is

contained in the testimonial letter from Silver Fleet Motor Express, Inc. If you are looking for more efficient, dependable and economical engine performance, we recommend that you install Champion Spark Plugs in all units of your fleet and you'll "Keep 'Em Rolling Longer."

NO JOB TOO BIG—NO WORK TOO TOUGH—for CHAMPIONS

PROVED ON EVERY FRONT



WHERE THE GOING IS TOUGH

Victor Sealing Products—gaskets and oil seals, are playing a vital part in the wartime performance of thousands of heavy duty tractors, trucks and other automotive equipment. In these huge "cats" the engines must give the maximum of their power, hour after hour. Victor Manufacturing and Gasket Co., P. O. Box 1333, Chicago, Ill., U. S. A.

VICTOR

GASKETS . . OIL SEALS

How to select Chassis lubricants

... to help equipment meet the heavy going of wartime schedules

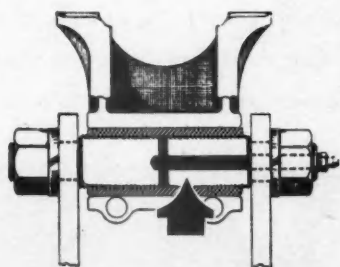
● THERE ARE MANY reasons why chassis lubrication should take a top spot in any preventive maintenance program. Chassis parts such as spring shackles, clutch and brake linkages, and steering gear knuckles operate under the most adverse conditions. They're either choked with dust or caked with mud, drenched in water or baked by road heat. These parts usually have little protection against these conditions except the lubricant. Yet a failure in any of them can seriously cut into useful truck time.

Fortunately adequate care can keep these failures at a minimum. That means selecting and applying the right lubricant at the right place, in the right amount, at the proper intervals. Naturally, the starting point is selecting the right lubricant. Some of the factors to be considered are:

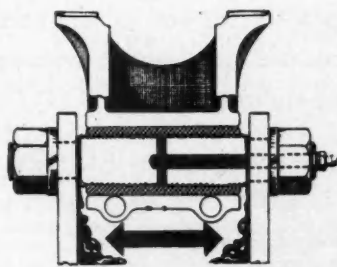
The grade of lubricant. It must be light enough to flow through the small channels usually provided in shackles and other fittings to reach the bearing surfaces. At the same time it must be heavy enough to force out old grease in the bearings and carry away any dirt that may have accumulated in

them. It must prevent excessive leakage and high consumption in Summer, and provide adequate lubrication in Winter.

Sealing ability. As chassis parts usually have little mechanical protection, the lubricant must keep dust, dirt, and moisture off bearing surfaces.



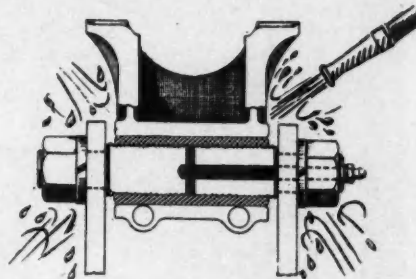
Must flow through small channels



Must force out old grease

Resistance to separation. In the presence of dirt, moisture, and heat, some greases separate, allowing the oil to leak out of the bearing, and causing hardening and caking in bearing passages. A chassis lubricant must resist separation.

Water resistance. The lubricant must not wash off easily, and must protect bearings against moisture and rust.



Must seal against dirt and water

To meet the many conditions in wheel bearing and chassis lubrication, Standard Oil has a complete line of automotive lubricants. Laboratory and road tests and actual service records prove the advantages to be gained in longer equipment life and fewer road failures, when lubricants are carefully chosen to match the job they are to do.

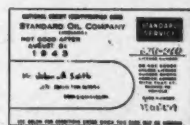
To help you select the lubricants you need, ask a Standard Oil representative for his recommendations. He can also help you set up lubricating schedules, and inspection and maintenance practices. His experience with these problems on other fleets will be valuable to you. Call or write any Standard Oil Company (Indiana) office, or 910 South Michigan Ave., Chicago, Ill. In Nebraska, contact any Standard Oil Company of Nebraska office.

Standard Automotive Lubricants

Standard Pressure Gun Grease • Standard Fibre Grease • Standard Water Pump Grease • Standard Wheel Bearing Grease • Standard Gear Lubricants.

Use Standard Oil Credit Cards

Available to holders of "T" ration cards and Certificates of War Necessity.



- Safer than cash
- Simplifies accounting
- Honored throughout U.S. and Canada

Oil is ammunition... Use it wisely

STANDARD OIL COMPANY (INDIANA)

**STANDARD
SERVICE**

★ FLEET CONSERVATION SERVICE

Trucks . . . like Tank Crews . . .

must stay

"IN CONDITION"



In special conditioning rooms, the Armored Force Medical Corps checks the reactions of tank crews to living and working for days in extreme temperatures of 30 degrees below zero and 120 degrees Fahrenheit.

• Bouncing and jolting over rough terrain, bowling over everything in their path, fighting in sub-zero cold or scorching heat, tank crews have to be brutes for punishment. But conditioning fits them for it.

And because your trucks are a part of the great transportation system

of America's war production effort—they too must be kept IN CONDITION for tougher, longer-hauling schedules.

So, use your DeVilbiss Spray Painting Equipment regularly—to stop rust from eating into chassis parts, radiators, fender seams and body surfaces.

And, incidentally, be sure to take good care of your DeVilbiss Air Compressors and other Service Equipment. They will save you time and save manpower if maintained carefully. They're hard to replace, too. Ask your DeVilbiss distributor to show you how to make them last.

THE DEVILBISS COMPANY • TOLEDO, OHIO

Canadian Plant: WINDSOR, ONTARIO



PROUD to have won the coveted Army-Navy "E" for excellence in war production, the men and women of DeVilbiss pledge to continue giving their all-out best—for Victory.

DEVILBISS

SPRAY SYSTEMS



SPRAY EQUIPMENT • EXHAUST SYSTEMS • AIR COMPRESSORS • HOSE AND CONNECTIONS



**"PLUG-CHEK" beats
years of experience**

says L. GRAHAM, Superintendent,
U. S. Truck Company, Inc.



RESTORE SPARK PLUG PERFORMANCE ... CHECK GAS WASTE!

It's easy for even an inexperienced mechanic to make an accurate analysis of spark plug condition with Auto-Lite's sensational "Plug-Chek." He matches the spark plug with examples illustrated on the "Plug-Chek" Indicator. These examples refer to pages in the "Plug-Chek" Data Book which give complete information about the plug

condition—and what is necessary to restore spark plug performance.

Join the many prominent operators of bus and truck fleets now getting better performance from their units with "Plug-Chek" Inspection Service. Auto-Lite offers these new complete "Plug-Chek" Service Kits free. Just write on your letterhead to



THE ELECTRIC AUTO-LITE COMPANY
TOLEDO, OHIO Merchandising Division SARNIA, ONTARIO

AUTO-LITE SPARK PLUGS

IGNITION ENGINEERED BY IGNITION ENGINEERS



☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

**Monroe builds
equipment designed for
Tanks, Tankbusters and
all other vehicles**

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

MONROE SHOCK ABSORBERS



● In our files we have hundreds of photographs showing Monroe equipped vehicles on many fighting fronts.

Monroe Shock Absorbers are sturdily constructed and embody the best scientific features yet developed; that's why they proved so supremely satisfactory in every climate and under the most trying conditions.

Monroes are built in sizes designed for the heaviest land vehicles, also for light transportation vehicles.



**Jeeps are equipped
with Monroes**



Spicer Transmissions, Universal Joints and Propeller Shafts— proved by famous A.C.F.—and in the front line A.E.F.

In the gruelling duty of constant stop-and-go public transportation, Spicer Transmissions, Universal Joints and Propeller Shafts have helped A.C.F. Buses establish a great record for quick, safe, on-time service . . . Now these same Spicer Units are helping land Allied armies, equipment and supplies quickly, safely, and on time in our scheduled march to Victory. Spicer was ready when war came—Spicer again will be ready when peace is declared. Spicer Manufacturing Corporation, Toledo, Ohio.



BROWN-LIPE CLUTCHES AND TRANSMISSIONS • SALISBURY FRONT AND REAR AXLES

SPICER UNIVERSAL JOINTS • PARISH FRAMES, STAMPINGS

YOUR GENERAL TIRE DEALER HAS THE SURE WAY

To Help You Get

**THE LAST
POSSIBLE MILE
from EVERY TIRE**



He Alone Renews Tires by Scientific Kraft System Methods that Guarantee Dependable Extra Mileage

♦ At a time when every pound of rubber must do its utmost to keep America's transportation system operating, your General Tire Dealer stands ready to give you the proved benefits of the pioneer tire recapping method . . . the system that guarantees uniform quality and extra mileage everywhere.

For over four years the General Tire-Kraft System has provided the one sure way to get thousands of extra miles from worn tires. Operators from coast to coast have learned to trust the quality of Kraft Recapping. They have found that the exclusive Kraft methods of worn-tire inspection, buffing, and balancing—result in dependable mileage never obtained before from recapped tires.

See or call your General Tire Dealer today.

**THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO**

**The Kraft System Recaps
Tires Locally Up to
Factory Standards
By Means of:**

- Factory-Approved Equipment
- Factory-Specified Methods
- Factory-Trained Men
- Factory-Laboratory Control

**ONLY THE KRAFT SYSTEM HAS
ALL THESE FACTORY CONTROLS**

THE KRAFT SYSTEM IS AVAILABLE ONLY AT DISTRIBUTORS FOR

The

GENERAL TIRE

—goes a long way to make friends

At the PENTAGON BUILDING... *there's a White Bus every few seconds*

THE WORLD'S LARGEST bus terminal is a simple functional tunnel which burrows under the War Department's huge Pentagon Building . . . across the Potomac from Washington, at Arlington, Virginia.

It serves 30,000 persons every rush hour . . . which means that hundreds of 12-cylinder White Coaches enter and leave, in four lanes, every few seconds.

It's a four-mile trip from downtown Washington, so Pentagon Building workers would be seriously handicapped in getting to and from their vital work without this dependable bus service provided by the Capital Transit Company . . . operating, in the Nation's



capital one of the largest fleets of White Coaches.

In cities all over America . . . in war production centers, at arsenals, army camps and naval bases . . . dependable Whites are providing the kind of service that gets workers to work on time. Now, all but irreplaceable, White Coaches are having their normally long life extended by a Conservation Plan similar to the one which White pioneered and has in effect to prolong the life of motor trucks.

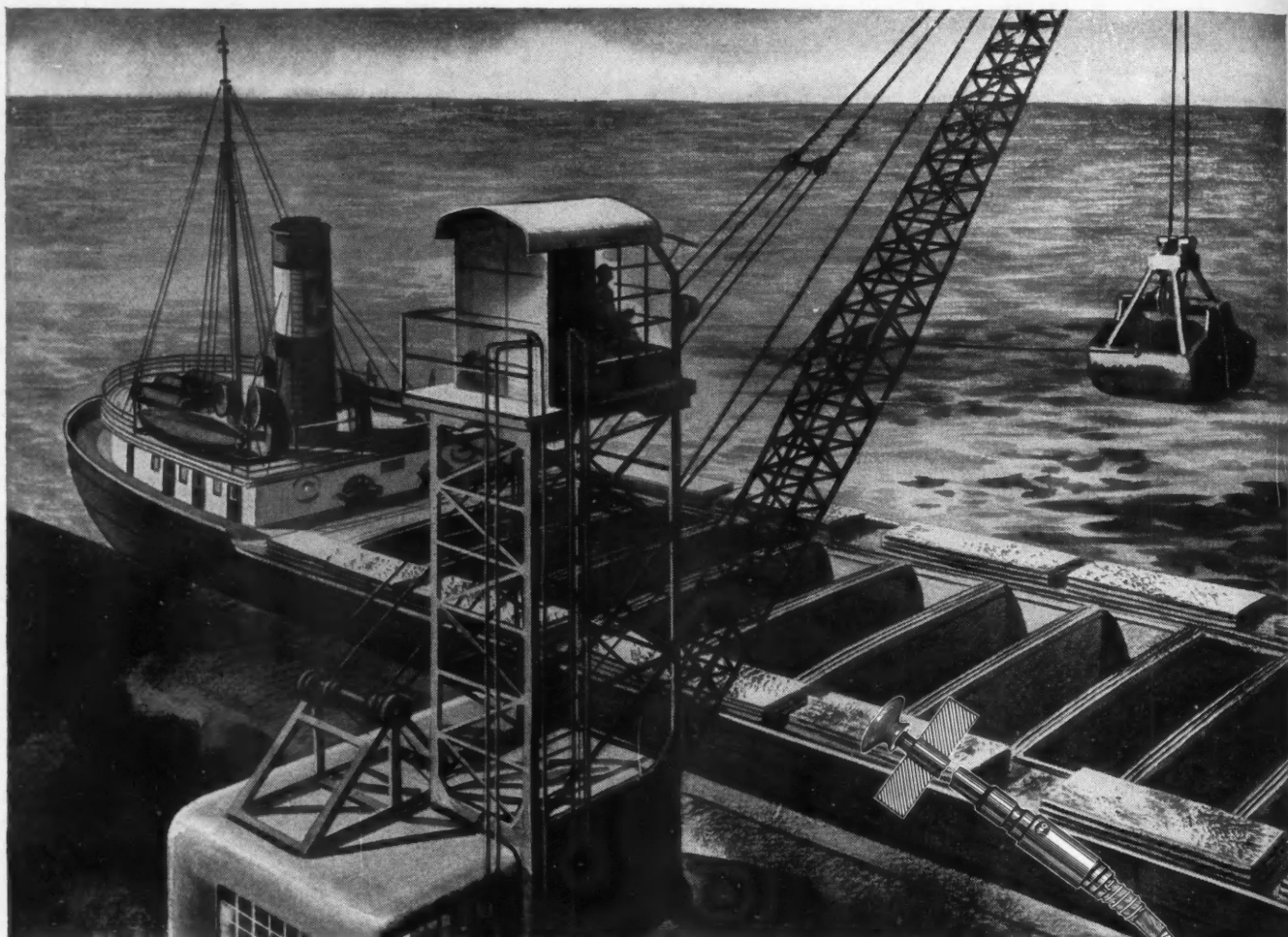
THE WHITE MOTOR COMPANY • CLEVELAND

Builders of U. S. Army Tank Destroyers, Scout Cars, Half-Tracs, Prime Movers and Cargo Trucks, the complete line of Super Power Trucks and Tractors, City and Inter-City Coaches, Safety School Busses and the Famous White Horse.



White

FOR MORE THAN 40 YEARS THE GREATEST NAME IN BUSES



Certainly, **PUSH-PULL** CONTROLS can be used for any manual control . . .

Here you see a great coal-unloading operation. **PUSH-PULL CONTROLS** in the operator's high cab control every operation of boom and bucket—adding tremendous capacity to equipment.

Different only in detail, those **PUSH-PULL CONTROLS** might just as well be operating on a motor truck, carrier-scraper, shovel, any piece of automotive equipment requiring remote control for any of its operations. Today, the need for positive and foolproof controls on fighting equipment—motor trucks, tanks, aircraft, etc.—takes all of the production capacity for **PUSH-PULL CONTROLS**.

As you look ahead to the day when you can get new equipment again, expect to find much of it modernized for new, peacetime efficiency. Check into such matters as controls. And when you find motor trucks, road-building and construction equipment that offer the operating advantages of **PUSH-PULL CONTROLS**, you're on the track of units that, most likely, offer other modern improvements as well.

PUSH-PULL AUTOMOTIVE CONTROLS

AUTOMOTIVE AND AIRCRAFT DIVISION

6-235 General Motors Building, Detroit • 695 Bryant Street, San Francisco

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT, CONNECTICUT



ESSENTIAL PRODUCTS . . . TRU-LAY Aircraft, Automotive, and Industrial Controls, TRU-LOC Aircraft Terminals, AMERICAN CABLE Wire Rope, TRU-STOP Brakes, AMERICAN Chain, WEED Tire Chains, ACCO Malleable Castings, CAMPBELL Cutting Machines, FORD Hoists, Trolleys, HAZARD Wire Rope, Yacht Rigging, MANLEY Auto Service Equipment, OWEN Springs, PAGE Fence, Shaped Wire, Welding Wire, READING-PRATT & CADY Valves, READING Electric Steel Castings, WRIGHT Hoists, Cranes, Presses . . . *In Business for Your Safety*

Whiz MOTOR RYTHM

Bus Engines Battle Sludge Too!



stops bucking, cuts maintenance costs



To save time and money, to conserve equipment, leading bus, truck, and cab fleets use WHIZ MOTOR RYTHM regularly!

1. To stop bucking due to carbon, sludge, and varnish.
2. To cut engine maintenance and overhaul costs.
3. To save labor.
4. To save gas and oil.
5. To make equipment last longer.

WHIZ MOTOR RYTHM is a liquid chemical developed by Hollingshead research. When added to gasoline and oil, it automatically—*chemically*—cleans out carbon, sludge, and varnish deposits *that rob engines of power*. It dissolves and keeps out carbon binders and accumulations that form around valves, piston heads, spark plugs, piston ring grooves, and in the crankcase.

WHIZ MOTOR RYTHM keeps engines in better running condition—makes equipment last longer. Cuts wasteful down-time and costly overhauls. Saves gas and oil.

Use WHIZ MOTOR RYTHM regularly to get the maximum from your equipment and manpower. R. M. Hollingshead Corp., Camden, New Jersey; Toronto, Canada.

BUY MORE BONDS

Hollingshead
LEADER IN MAINTENANCE CHEMICALS



Write for information on other WHIZ fleet reconditioning and maintenance products:

HO-ZOF DEGREASING COMPOUND • BRAKE FLUID • RUST PREVENTIVE • COOLING SYSTEM CLEANERS • SHOCK ABSORBER FLUID



Tops in Stops

K-D Jumbo Stop Lamp—No. 254-F

- Extra large, 7" lens—red or amber—with refracted letters.
- Heavy cork gaskets offer positive protection against dust and moisture.
- Bracket or Flush Mounting.
- Flush Mounting, Model 254-F List \$3.25
- Bracket Mounting, Model 254 List 3.80

● FROM BROOKLYN YARD TO BURMA ROAD, on trucks, buses, passenger cars, and on Army transports, K-D Safety lighting equipment is serving important civilian and military requirements. Low original and maintenance cost, plus long service, point up the economy of the K-D line.

For more than a quarter century, K-D has led the field by introducing unexcelled lighting devices, manufactured always to exceed S.A.E. and I.C.C. requirements.

Special and exclusive safety features, similar to those listed for the K-D Stop Lamp, are

inherent in all other K-D lighting equipment. Precise highway engineering insures low maintenance costs, minimum breakage, less highway delay, and above all, that EXTRA margin of safety that means so much today.

There's a K-D lamp for every safety need . . . clearance lamps, direction signals, fog lamps, stoplights, and reflectors. Your K-D Jobber has them all. He is ready to help you solve your safety lighting problems, with *the right lamp*, for *the right job*, at *the right price*.

THE K-D LAMP COMPANY • CINCINNATI, OHIO

K-D LIGHTING

*The Right Light
for the Right job*



COMBINATION STOP-AND-TAIL LAMP



Two mounting bolts on 2" centers. Sturdy, efficient, easy to install. Patented 3½" Tri-flex Reflecting lens, for extra visibility. Black enamel finish.

Model 216-B . . . List \$2.00

CLEARANCE AND MARKER LAMP



Flat surface mounting. Brilliant visibility. Shallow depth of 1¼" to mount within limits of rub rail. 3¾" lens permits excellent side visibility.

Model 539 . . . List \$0.58

ARMORED MARKER AND CLEARANCE LAMP



Fresnel-type lens, red or amber, 180° visibility. Blows glance off its specially designed cast metal housing. Housing, lens, screws locked in one compact assembly.

Model 541 . . . List \$1.05

Truck Tire Tips



by Hood

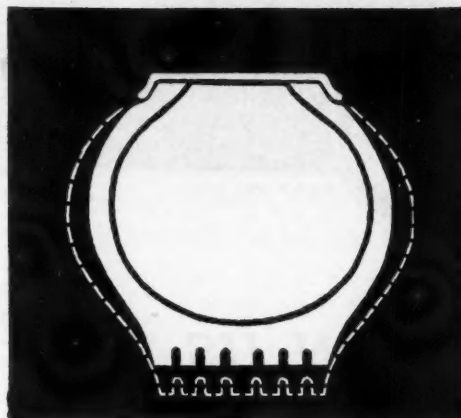
Correct Rim Size is Vital to Tire Mileage

ALL too frequently, an operator whose truck has been equipped with *oversize* tires will have more tire trouble and get less mileage than with the original equipment size. This is caused by retaining the original rims rather than changing to a size to fit the tire. Here's why the smaller size rim will not give satisfactory service.

1. The beads of the tire are squeezed close together, which pulls the tire out of its proper shape and throws a strain on the sidewalls.

2. Squeezing the beads closer together reduces the air chamber, thus lowering the carrying capacity of the tire. (The volume of air in a tire determines its carrying capacity.)

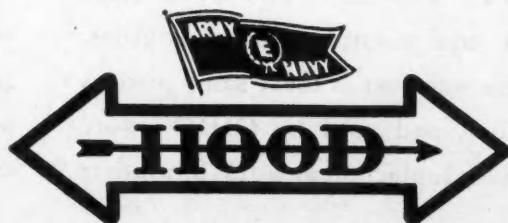
Always determine the correct rim size before buying oversize tires—then change to that size as quickly as possible.



For a wise buy on tires . . .

Get "Heavy Service" Hood Tires

Backed by a lifetime guarantee and built with new "Speed-Run Construction" to haul heavy loads at high speeds, at lowest cost per mile.



"Heavy Service" Truck Tires

THE HOOD RUBBER COMPANY

A Division of The B. F. Goodrich Company
Akron, Ohio • Los Angeles, Calif.



PARDON US FOR POINTING... BUT

That LYNITE* LO-EX trade-mark is worth keeping your eye on. You'll see it in hundreds of pistons—prewar vintage, of course, unless they're military jobs. You'll have a chance to note their fine performance.

LYNITE LO-EX PISTONS were standard equipment in many engines, before the war, just as these same pistons—machined and sold by OHIO—were favorites for replacement work. Smoother

performance, longer bearing life, lower fuel and oil consumption are obtained in engines so equipped.

OHIO promises to make LYNITE LO-EX PISTONS available for your car and truck work just as soon as the war permits. We're still piston specialists, you know, making all kinds for war service. It will be easy to swing back to peacetime production the instant we get the "GO" sign.

**Lynite and LO-EX are registered trade-marks of Aluminum Company of America, makers of castings for genuine Lynite Pistons.*

THE OHIO PISTON CO.

CLEVELAND, OHIO



KEEP INDISPENSABLE CARS IN CONSTANT SERVICE WITH **AMALIE** MOTOR OIL

Keeping indispensable cars in emergency-meeting service, *constantly*, is an important part of welfare maintenance for our hundred and twenty odd millions at home. And an important part of the maintenance of ambulances, police emergency cars and fire department equipment is the use of AMALIE Pennsylvania Motor Oil. Take the case of piston lubrication. Heavy loading, high speeds and long working periods between service check-ups stress the need of the best oil obtainable.

AMALIE Pennsylvania Motor Oil is doing a time and money saving job for thousands of essential car engines. AMALIE's Greater Oiliness* means protection for metals at work. Made from the highest quality Pennsylvania Crude, AMALIE's extra oiliness is safeguarded by the straight-run refining methods exclusive with this Company. Experience dating back to 1880 has helped to make a fine product steadily better.

Write Dept. J122 for your FREE copy of the Booklet "Greater Oiliness"

*The Sperry-Cammen Adheroscope test ranks straight-run Pennsylvania Oils highest in oiliness.

AMALIE
PENNSYLVANIA
MOTOR OIL



Product of **DAUGHERTY REFINERY**

Division of L. SONNEBORN SONS, INC., New York, N. Y.
Refineries: Petrolia, Pa., and Franklin, Pa. • Plants: Nutley, N. J.



An Anchor

TO WINDWARD IN
TIME OF STORM

Not since a young nation left crimson tracks in the snows of Valley Forge has America faced such a stupendous job. With enemies in two oceans, and our fighting-men on a dozen land-fronts, we have a truly global war on our hands. And it is transportation's job to keep things moving on the home-front.

What is more important to the operation and long life of war's essential vehicles than brakes and clutches? Good tires are useless without brakes to stop them. Good engines are of little avail in a vehicle that won't stop and start. This is Grey-Rock's part in the war-effort . . . keeping those vehicles running by supplying high-quality brake linings and clutch facings, and the technical information that makes them tick.

National Safety Council standards are part of Grey-Rock's time-tested information, available to all who service these vehicles of Victory. The greenest mechanic can comprehend Grey-Rock instructions, thereby compensating for lost man-power by saving man-hours. Consult your Grey-Rock jobber . . . an anchor to windward in time of storm. UNITED STATES ASBESTOS DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.



ESSENTIAL PRODUCTS FOR ESSENTIAL TRANSPORTATION

Truck transportation is essential
to win the War!

PROLONG

the life of your trucks
by having hydraulic brake systems checked regularly

HOW long has it been since anybody checked the level of the brake fluid in the master cylinders of your trucks? It's true you may have been so busy that you haven't given the matter a thought, so better have the fluid levels checked now. It will take but a few minutes, and precaution today may save brake failure tomorrow.

When additional fluid is needed, use

WAGNER LOCKHEED No. 21 HYDRAULIC BRAKE FLUID

No. 21 is recommended for all hydraulic brakes. It retains its highly efficient qualities under all driving conditions. It completely and properly mixes with all other approved fluids, furnishes necessary lubrication for working parts of the hydraulic brake system, and in general, preserves the essential characteristics of the entire system.

Please be assured that Wagner, through Wagner jobbers, is doing everything possible to keep you and other dealers supplied with No. 21 fluid. Whatever the size or shape of container, Wagner No. 21 will be readily recognized by the familiar red, white and blue design with No. 21 in the circle.



SERVICE



Whenever brakes need to be repaired - - you'll get parts of the highest quality by specifying Wagner Lockheed



AUTOMOTIVE
PARTS DIVISION

Wagner Electric Corporation
ESTABLISHED 1891
AUTOMOTIVE AND ELECTRICAL PRODUCTS

6470 PLYMOUTH AVE.
ST. LOUIS 14, MO.

3-16D



How is this high school boy "saving" buses?

THIS high school boy sells bus fares—tokens and tickets—to bus riders in a city doing important war work. By so doing, he saves loading time . . . speeds up service . . . makes existing equipment do more work.

And that's how he "saves" buses . . .

This is another example of the many ways fleet operators are working to meet today's heavy traffic demands. Other efforts include close adherence to the principles of Protective Maintenance, and the installing of only those replacement parts which have proved records of dependability and long life.

It is the dependability of batteries equipped with Fiberglas* Retainer Mats which makes them so popular with bus and trucking men today. For, Fiberglas-equipped batteries offer 3 definite advantages:

1. These batteries have unusual staying power—in some instances double that of compa-



table batteries without Fiberglas* Retainer Mats (1).

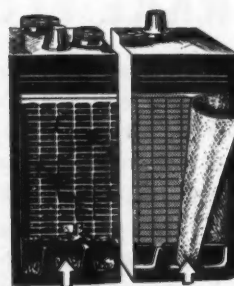
2. These batteries stand up far better under extreme vibration. This is an important reason why they are used in many armored cars, tanks, and submarines.

3. These batteries have excellent cold-starting characteristics and higher average power output during battery life. Today the Army and Navy are demanding large quantities of Fiberglas Retainer Mats. In the future, therefore, it may not be so easy for you bus-and-truck owners to obtain all the Fiberglas-equipped batteries you need.

If this happens, please realize the reason is that we are determined to provide sufficient Fiberglas for every vital wartime use—where Fiberglas is the only material suitable for the job.

Please also realize that in taking *extra* special care of your

(1) According to impartial tests conducted to meet S.A.E. specifications.



Left: Without Fiberglas Retainer Mats, power-producing material sheds to the floor of the battery, piling up sufficiently to short the cell.

Right: With Fiberglas Retainer Mats, active material is held in place longer on the battery grids, giving longer battery life and more constant power during battery life.

present Fiberglas-equipped batteries, you are conserving an important war material.

Owens-Corning Fiberglas Corporation, Toledo, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.

FIBERGLAS

*T. M. Reg. U.S. Pat. Off.

BATTERY RETAINER MATS



THE DRUM

*that won its Wings
at War*

Serves on the Home Front, too

Wolf's Head Oil won its wings years ago! Ever since World War I, Wolf's Head has been contributing to progress in the air; has been the choice of experts in Aviation, where life itself depends on *performance*—and where price, favor and prejudice are secondary.

Pan American Airways, for instance, uses Wolf's Head in the "Clippers"—has used it for over 14 years . . . ONE BILLION passenger-miles. Leading airplane engine manufacturers use Wolf's Head

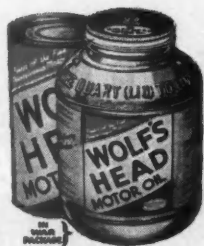
during critical testing and breaking-in runs. Wolf's Head has been shipped all around the world for use in United Nations' planes.

Now that every car and truck needs engine-protection as never before, *cast secondary considerations aside!* Use and recommend the one oil that is growing fastest in big-fleet acceptance . . . the oil that protects engines *better*, and at lowest real cost per mile . . . that means Wolf's Head, 100% Pennsylvania—the "Finest of the Fine."

"Special" FOR OVERWORKED ENGINES

Wolf's Head HEAVY DUTY Oil is designed especially for severe heavy duty service in overworked or overloaded trucks, buses, tractors and engines. "HEAVY DUTY" has all the features of regular Wolf's Head, *plus* high detergency for engine-cleansing. Like regular Wolf's Head, "HEAVY DUTY" resists oxidation and is safe for use with all bearing metals.

Field and lab tests prove that Wolf's Head HEAVY DUTY Oil does the job *better*. Get the proof—send a card or letter for the free booklet, "Heavy Duty Maintenance." Wolf's Head Oil Refining Co., Oil City, Pa.—New York, N. Y.




WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pennsylvania

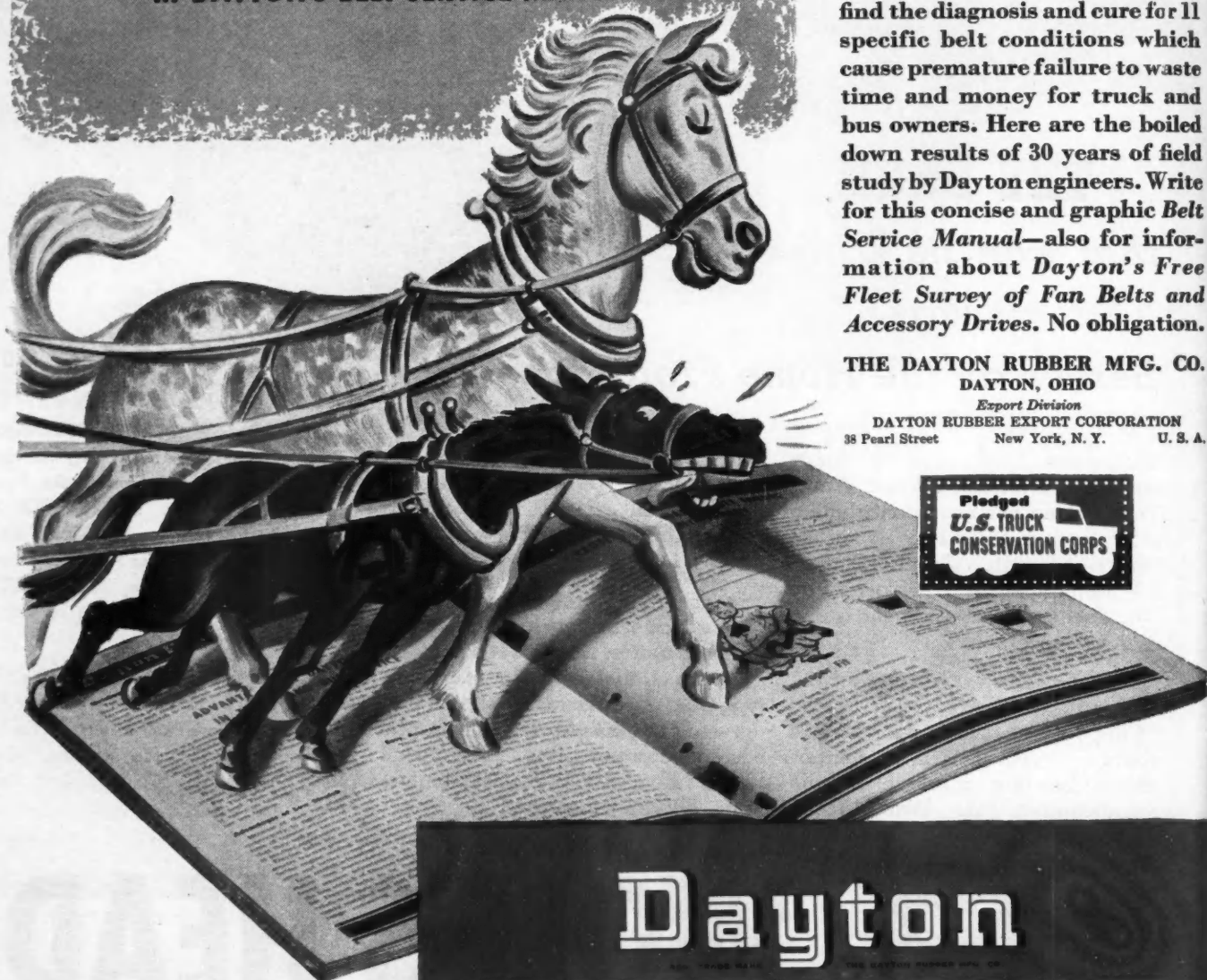


P. G. C. O. A. Permit No. 6

*Look
who's here!* 

The MISMATED SLACKERS

... and ten other Fan Belt Failure-Makers
in DAYTON'S BELT SERVICE MANUAL



When unmatched belts are used in multiples—one or more are usually slackers which loaf and slip while the rest carry more than their share of the load. The result of mismatched slacker belts is a short and unhappy life for all concerned—and plenty of grief for you. You'll find all about their cause and cure on page 12 of *Dayton's Belt Service Manual*. And on the lively and instructive pages of this same book you'll find the diagnosis and cure for 11 specific belt conditions which cause premature failure to waste time and money for truck and bus owners. Here are the boiled down results of 30 years of field study by Dayton engineers. Write for this concise and graphic *Belt Service Manual*—also for information about *Dayton's Free Fleet Survey of Fan Belts and Accessory Drives*. No obligation.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

Export Division
DAYTON RUBBER EXPORT CORPORATION
38 Pearl Street New York, N. Y. U. S. A.



**THROW YOUR SCRAP
INTO THE FIGHT!**

BUY WAR BONDS
AND SAVINGS STAMPS

Dayton

THE GREATEST NAME IN FAN BELTS

85% Original Equipment on all American Makes of Cars
WORLD'S LARGEST MANUFACTURER OF V-BELTS

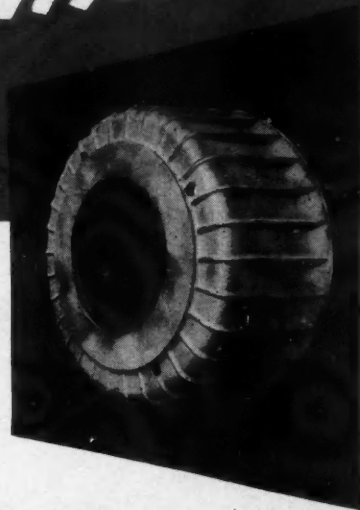
Meehanite Foundries

Allentown, Pa.
 Traylor Engineering Company
 Ansonia, Conn.
 Farrel-Birmingham Co., Inc.
 Birmingham, Ala.
 Continental Gin Company
 Bridgewater, Mass.
 The Henry Perkins Co.
 Brooklyn, New York
 E. W. Bliss Company
 Buffalo, N. Y.
 Pohlman Foundry Co., Inc.
 Charleston, W. Va.
 Kanawha Manufacturing Co.
 Chattanooga, Tenn.
 Ross-Meehan Foundries
 Chicago, Ill.
 Greenlee Foundry Company
 Cincinnati, Ohio
 Cincinnati Grinders Incorporated
 The Cincinnati Milling Machine Co.
 Cleveland, Ohio
 Fulton Foundry & Machine Co.
 Denver, Colo.
 The Stearns-Roger Mfg. Co.
 Detroit, Mich.
 Atlas Foundry Co.
 Flint, Mich.
 General Foundry & Mfg. Company
 Hamilton, Ohio
 The Hamilton Foundry & Machine Co.
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 Irvington, N. J.
 Barnett Foundry & Machine Co.
 Jeannette, Pa.
 Elliott Company
 Los Angeles, Calif.
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 Milwaukee, Wis.
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 Cooper-Bessemer Corporation
 New Rochelle, N. Y.
 Meehanite Metal Corporation
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 (R. D. Wood Company, Selling Agents)
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 Rosedale Foundry & Machine Co.
 Portland, Oregon
 Crawford & Doherty Foundry Co.
 Rochester, N. Y.
 American Laundry Machinery Co.
 St. Louis, Mo.
 Banner Iron Works
 St. Paul, Minn.
 Valley Iron Works
 Seattle, Washington
 Washington Iron Works
 London, Eng.
 The International Meehanite
 Metal Co., Ltd.
 Waterloo, N. S. W.
 Australian Meehanite Metal Co., Ltd.
 Johannesburg, South Africa
 Meehanite Metal Co. (S.A.) (Pty.) Ltd.

*you'll get
 better braking-
 longer lining life-
 when your
 brake drums are
 made of—*

Meehanite

A unique combination of "built-in" physical properties gives Meehanite brake drums longer life, greater effectiveness. Illustrated here is a special design used on Fruehauf trailers.



Today, the inherent qualities of Meehanite brake drums are the very advantages most sought-for by operators everywhere. Long life, smooth sure action, freedom from maintenance, dependability are "musts" today—and because of the special metallurgical structure of Meehanite brake drum metal these qualities are assured: longer life of lining and drums, greater resistance to braking heat, smooth braking action, ample strength to withstand

high pressures, rigidity to prevent distortion, toughness to resist wear.

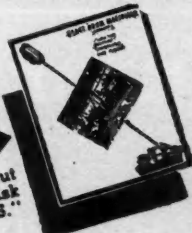
Proved by hundreds of thousands of miles in commercial service, Meehanite brake drums will help you maintain highest efficiency, reduce maintenance "time-out", provide better braking at all times—in other words, help you "keep 'em rolling"!

MEEHANITE RESEARCH INSTITUTE, New Rochelle, N. Y.

MEEHANITE

SEND FOR BOOKLET

Facts you should know about brake drum metals. Free. Ask for booklet "BRAKE DRUMS."



BEAM TO BRING BOMBERS HOME

There's a tiny beam of bluish light. A film passing through it. Zig-zag lines forming a pattern on a chart... a chart that gives a preview of the performance of piston rings a year ahead of any now in the air.

★ ★ ★
When the war call came, American Hammered was ready—was then making advanced aviation piston rings. Ever since World War I, A-H rings had been contributing to faster and more powerful planes—had played their part in practically all the newsworthy records and accomplishments in the air.

But no one factory could make aviation rings in the enormous quantities needed for United Nations' plane production. American Hammered shared its knowledge with other piston ring manufacturers, for combined war production.

★ ★ ★
Through their continuing research in the laboratory, A-H engineers contribute to United Nations' air supremacy... they are writing tomorrow's automotive history today!



American Hammered Piston Rings

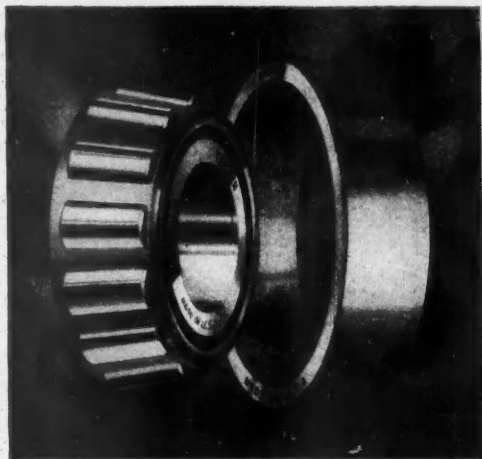
FOR CARS • TRUCKS • BUSES • TRACTORS

a **K O P P E R S**

*Better by 25 Years of
Aviation Engineering
product*



WHY WORRY ABOUT ROLLER BEARING DESIGN IT'S PERFORMANCE THAT COUNTS



During the past years many claims have been made for various improved design features for tapered roller bearings. Many of these features, sponsored of course, by the great enthusiasm of their inventors for what seemingly were good ideas, have been put into actual production, found some users, had their day, and then passed out of the picture.

Any engineer can design a bearing that looks like a Timken. He can design a bearing with more rolls in it, or fewer rolls, or longer rolls, or larger rolls, or smaller rolls, etc. He can even go so far as to eliminate the cone and machine the cone profile on a shaft; or he can eliminate the cup,

machining it in its housing, making it a part of the housing. He can eliminate the cage and provide divers methods to retain the rollers around the periphery of the cone. In fact there are hundreds of such ideas available for experiment.

We, here in the world's largest bearing research laboratories are doing just that day in and day out, year in and year out, and the steady and ever-continuing improvement of the Timken Bearing year after year bears out that fact. *But none of these ideas ever gets into a Timken Bearing until it has been definitely proved that it improves the bearing.*

After all, these are the things that count. Who uses the bearing? Where do they use it? How long have they used it? What is its record of performance? These and no others are the valid measures of comparison. Over eight thousand manufacturers of thousands of different pieces of equipment, including practically all of America's well-known manufacturing establishments, currently use Timken Bearings. Has any other tapered roller bearing a record to compare with that?

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN
IMPROVED ROLLER BEARINGS



To Insure Year-Around Travel Over the ALCAN HIGHWAY



It's getting hotter and hotter every day in the Aleutians—for the Japs—but not hot enough to melt the winter ice and snow, on the strategic "life-line" to our troops in Alaska.

The Alcan Highway must be kept open, and in good condition for military transport, at all cost.

Hundreds of Marmon-Herrington *All-Wheel-Drive* converted Ford trucks helped forge this vital link between Alaska and the States, through the Canadian wilderness. Driving through mud and snow and muskeg, through brush and swamp, and over grades too steep for "ordinary" trucks to master, these powerful, sure-

footed trucks, with power and traction applied through all wheels, played an important part in this great achievement of U. S. military engineers.

Now the same vehicles, with dump bodies and St. Paul underbody blades, remove ice and snow, haul maintenance materials, and keep grades in shape for the never-failing flow of guns, ammunition and food to our fighting men.

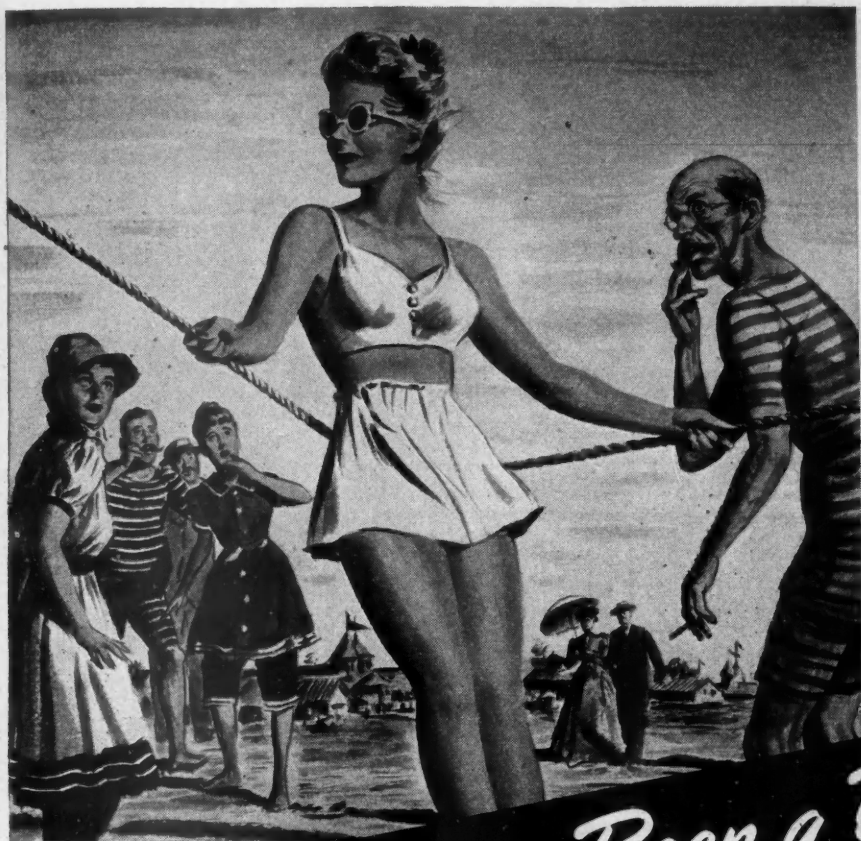
We at Marmon-Herrington are proud of the contribution our trucks have made to this great enterprise. These trucks, along with our tractors and tanks, have played an important part in the military operations of the United Nations. They have done much, and *they will do more*, for they received their "basic training" in the world's most difficult civilian services.

WHAT DID YOU DO FOR VICTORY TODAY? BUY WAR SAVINGS BONDS

MARMON-HERRINGTON

All-Wheel-Drive

MARMON-HERRINGTON CO., Inc., INDIANAPOLIS 7, INDIANA
Cable Address: MARTON



There's Been a Big Change

● Ever wear one of those old-time bathing suits? They covered the subject well—but they wouldn't do today. There's been a big change.

An important change has taken place in tapered roller bearings, too! Heavier loads—tougher going—longer hours . . . all begged for a bearing with more rollers, to stand up better under sterner work. Tyson developed just that kind of a bearing.

More rollers, yes—Tyson has *thirty percent* more, on the average. Size for size, Tyson users get greatly increased load capacities. What's more important, they get almost doubled bearing life.

Tyson "All-Rolls" Bearings are in tune with the times. They're tough. They're longer-lived. They carry greater loads.

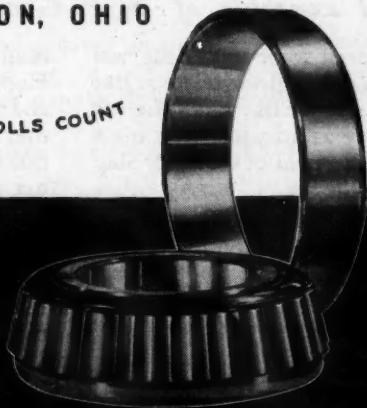
The big name in bearings today is . . . TYSON!

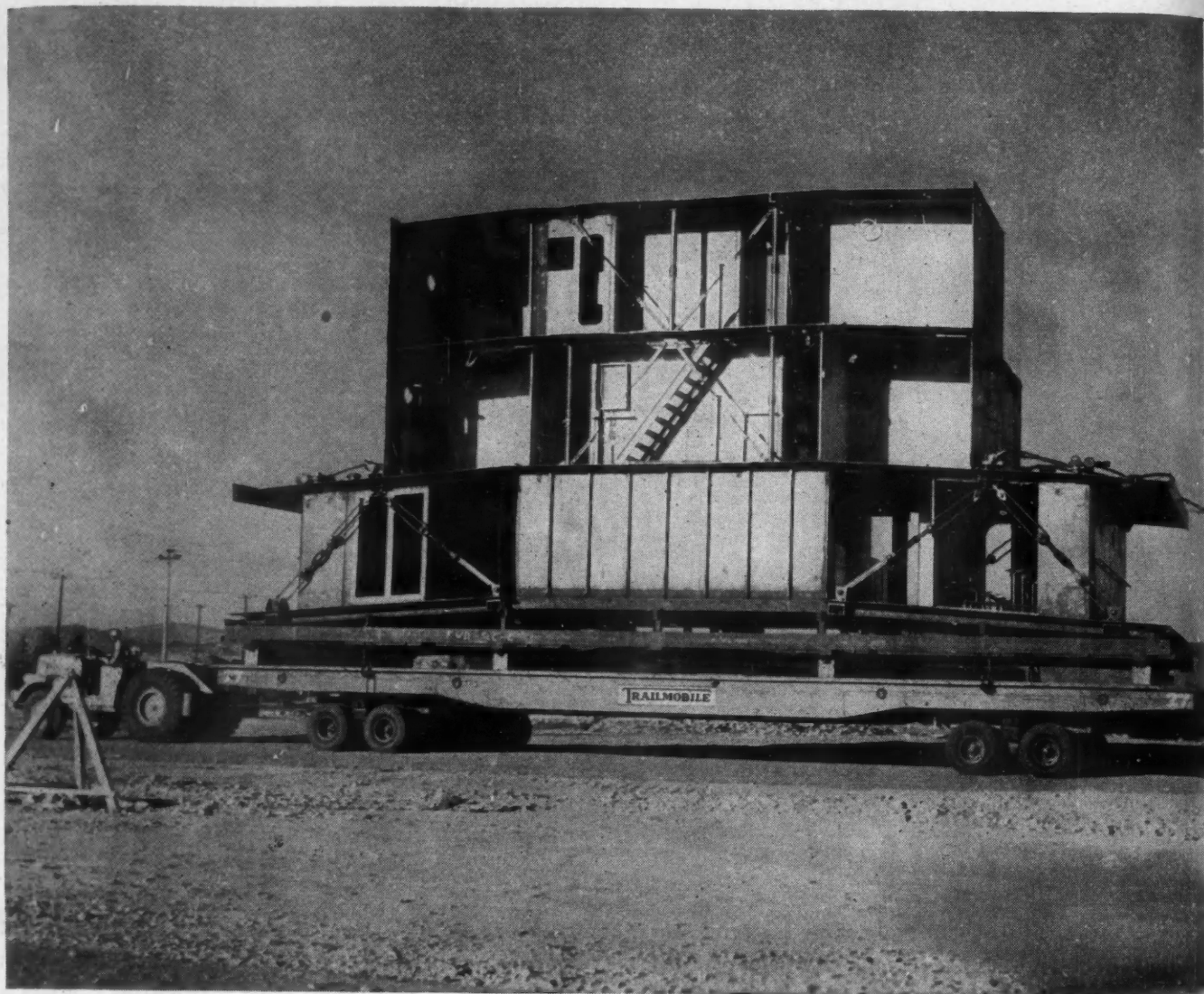
 TYSON BEARING CORPORATION, MASSILLON, OHIO

COUNT THE ROLLS • THE ROLLS COUNT

Tyson

TODAY'S HEAVY-DUTY BEARING





How They Deliver Victory Ships in 150-Ton Slices!

A typical example of B. F. Goodrich leadership in tires

YOU'VE seen some pretty big war loads on our highways lately. But did you ever see one like this? High as a house, heavy as a locomotive, it's a prefabricated segment of a Victory Ship on its way to the sea.

Just look at that driver! He's dwarfed almost beyond recognition by the pile of steel at his back. And look at that trailer! It's as long as a railroad flat car. Yet trailer and 150-ton load roll smoothly and safely along—on B. F. Goodrich Speedliner Silvertowns!

Ever since Pearl Harbor these sturdy, reliable Speedliners have been delivering the goods under the most grueling conditions ever faced by man or machine. At 50 below and in hub-deep

mud they helped build the Alaskan Highway. Under blazing desert skies and in sand that cuts like steel filings they brought up the men and munitions that pushed Rommel out of Africa.

As for everyday jobs—they're doing them, too. Up and down the land Speedliner Silvertowns are setting amazing new mileage records on all types of trucking operations. And while you may never have to move ship sections or fight your way through mud and sand, it's certainly reassuring to have such mighty reserves of

strength and durability at your service.

Remember the leadership of B. F. Goodrich when next you buy truck tires. And remember to see your B. F. Goodrich dealer *first*.



THERE'S A *great day* COMING..



What a day that will be, when your serviceman can say, "Your old friends are back. Now you can have Lynite* LO-EX Pistons for that replacement job your engine's been needing." When that day comes, it will mean that Uncle Sam's fighting men have their job well under control, and no longer need *all* the pistons Alcoa can produce.

And those Lynite LO-EX Pistons will be better than ever, too, thanks to what we're learning in making pistons for all kinds of engines. The combination of design, light weight, low expansion and skillful manufacturing will again make these pistons favorites for replacement work. ALUMINUM COMPANY OF AMERICA, 2139 Gulf Bldg., Pittsburgh, Pa.

*Lynite and LO-EX are Registered Trade Marks of Aluminum Company of America



Full Loads...Short Hauls

Two Years' Driving with No Time Out



... and this FWD is still going strong

Stop-and-go short hauls day after day, with 12-ton loads, is a tough test for *any* truck.

But this FWD in Appleton, Wisconsin, has been on the go for two years in just that kind of service. This FWD is owned by P. J. Heenan, owner and operator of the Eastern Transportation Co. "Not since we purchased this truck have we been tied up or lost time," writes Mr. Heenan.

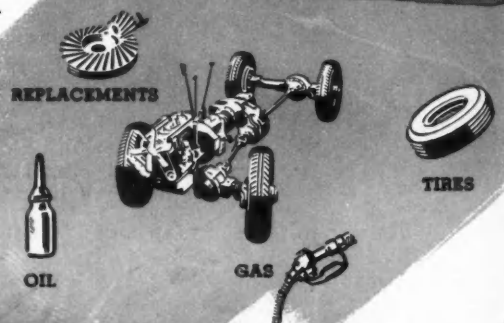
Mr. Heenan purchased this FWD truck (a T-26 tractor) in August, 1941. It is used daily on Eastern's Manitowoc-Appleton run. In over 50,000 miles, the gasoline economy on this short haul averaged 4.6 to 5 miles per gallon, with loads up to 12 tons.

Extra ruggedness and dependability are built into FWD trucks. Owners know that FWD's never become "orphans" — that progressive interchangeability of vital parts keeps FWD's in service far beyond normal expectancy.

The full-powered traction of four driving wheels is vital for today's transportation tasks. See your FWD branch or dealer and get the whole story.

THE FOUR WHEEL DRIVE AUTO COMPANY
CLINTONVILLE, WISCONSIN
Canadian Factory: Kitchener, Ontario

Mr. P. J. Heenan, owner and operator of the eastern Transportation Co., keeps in touch with operations. He's always "on the go," like his FWD.



The True Four-Wheel-Drive Principle With Center Differential Asks Less In: Tires—Gas—Oil—Replacements.



COMMERCIAL



CONSTRUCTION



UTILITIES



OIL FIELDS



MILITARY



IN EVERY FIELD WHERE TRUCK QUALITY IS PUT TO THE TEST — FWD'S STAND UP!

